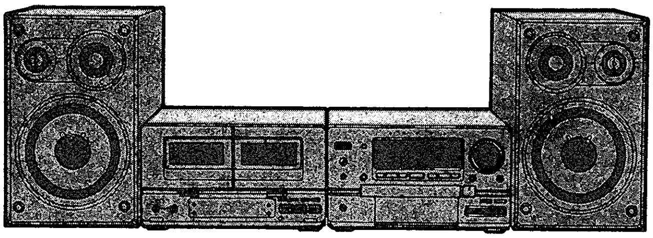
FH-E656

SERVICE MANUAL

E Model
Australian Model

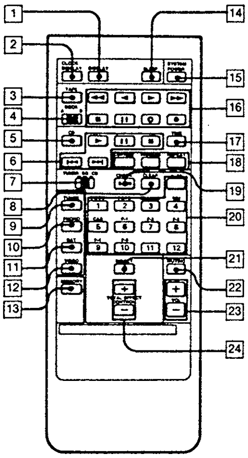


- FH-E656 is composed of following models. As for the service manual it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME FOR FH-E656

AMPLIFIER, CD, TUNER	HCD-H1700
DECK	TC-H1700
SPEAKER SYSTEM	SS-H1700

REMOTE COMMANDER (RM-S177)



1 DISPLAY button
2 CLOCK DISPLAY button
3 Cassette deck select button
4 DECK A/B selector
5 CD player select button
6 CD player operation buttons
7 TUNER/EQ/CD selector
8 CLEAR button
9 Tuner select button
10 PHONO select button (used only for the model for Europe)
11 DAT select button
12 VIDEO select button (used only for the model for other than Europe)
13 MEMORY button
14 SLEEP timer button
15 SYSTEM POWER button
16 Tape operation buttons
17 TIME button
18 PLAY MODE buttons
19 CHECK (CD player)
BAND (tuner) button
20 Tuner/equalizer/CD plyer numeric buttons
21 DIRECT button
22 MUTING button
23 VOLUME +/– control buttons
24 TOTAL EFFECT CONTROL +/– buttons

SPECIFICATIONS

Power requirements	European model: 220 — 230 V, 50/60 Hz Model for other countries: 110 — 120 V or 220 — 240 V AC adjustable, 50/60 Hz
Power consumption	European model: 90 watts Model for other countries: 90 watts
Dimensions	Tuner/Amplifier/CD player Approx. 225 x 125 x 265 mm (w/h/d) Cassette deck Approx. 225 x 125 x 230 mm (w/h/d) incl. projecting parts and controls
Weight	Tuner/Amplifier/CD Player Approx. 4.5 kg Cassette deck Approx. 2.5 kg

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MINI Hi-Fi COMPONENT SYSTEM

SONY®

ACCESSORIES & PACKING MATERIALS

Ref.No	Part.No	Description	Remarks
	ACCESSORIES & PACKING MATERIALS ********************************		
	1-501-374-11	ANTENNA, LOOP	
⚠	1-556-280-00	CORD, POWER (E)	
⚠	1-575-131-11	CORD, POWER (EA)	
⚠	1-555-074-00	CORD, POWER (AUS)	
	1-557-954-21	CORD, SPEAKER CONNECTION	
	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
	1-569-008-11	ADAPTER, CONVERSION 2P (EA)	
	1-693-077-11	COMMANDER, STANDARD (RM-S177)	
	3-754-883-11	MANUAL, INSTRUCTION (E) (ENGLISH, FRENCH, SPANISH, CHINESE, DUTCH)	
	3-754-883-21	MANUAL, INSTRUCTION (AUS, EA) (ENGLISH, FRENCH)	
*	4-949-996-01	CUSHION, UPPER (HCD-H1700)	
*	4-949-997-01	CUSHION, LOWER (HCD-H1700)	
*	4-949-998-01	CUSHION, UPPER (TC-H1700)	
*	4-949-999-01	CUSHION, LOWER (TC-H1700)	
*	4-950-000-01	CUSHION (4PCS.) (SS-H1700)	
*	4-951-418-01	INDIVIDUAL CARTON (AUS)	
*	4-951-416-01	INDIVIDUAL CARTON (E, EA)	
	X-4942-583-1	HANDLE ASSY (E, EA)	

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- EA : Saudi Arabia model
- AUS : Australian model

Sony Corporation
Audio Group

English
92D1920-1
Printed in Japan

© 1992.3

Published by Customer Relations and Service Group

TC-H1700

SERVICE MANUAL

Canadian Model
AEP Model
UK Model
E Model
Australian Model
East European Model

SONY
A
PLAY
AUTO REVERSE
B
REC/PLAY
AUTO REVERSE

This set is the deck section
in MHC-H1700, FH-E656.

Model Name Using Similar Mechanism	TC-WR520/WR520S	
Tape Transport Mechanism Type	DECK A	TCM-190RA12AS
	DECK B	TCM-190RB22A

SPECIFICATIONS

Recording system	4-track 2-channel stereo
Frequency response	(DOLBY NR OFF) 40 — 13,000 Hz (±3 dB) using TYPE I cassette (Sony HF-S) 40 — 14,000 Hz (±3 dB) using TYPE II cassette 40 — 15,000 Hz (±3 dB) Using TYPE IV cassette (For U.S.A. and Canada, Sony METAL-SLT. For Europe, U.K., and other countries, Sony METAL-S)
Wow and flutter	0.1% WRMS ±0.3% (DIN)
Dimensions	Approx. 225 x 125 x 230 mm (w/h/d) ($8^{7}/_{8}$ x 5 x $9^{1}/_{8}$ inches) incl. projecting parts and controls
Weight	Approx. 2.5 kg (5 lb 8 oz)

Design and specifications subject to change without notice.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. " DOLBY" and the double-D symbol 𝔻𝔻 are trademarks of Dolby Laboratories Licensing Corporation.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT
À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

STEREO CASSETTE DECK

SONY®

使用時は添付資料も参照のこと
Refer to the additional documents.

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NOTE :

G : Germany model
AUS : Australian model
EA : Saudi Arabia model
EE : East European model

SECTION 1
SERVICING NOTE

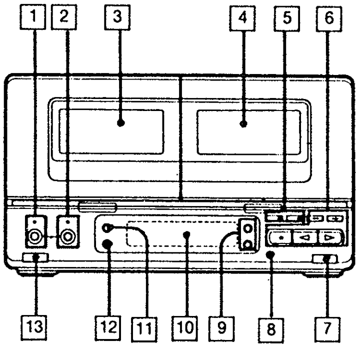
SUPPLY OF POWER DURING SERVICES

Because the equipment is not provided with any power supply, it is operated with power supplied from the amplifier HCD-H1700 used. The equipment requires the following 2 types of voltage. Therefore, connect the equipment to HCD-H1700 for services such as repairing with power supplied, because it will be too complicated to supply these voltages individually.

VOLTAGE	MAJOR CIRCUIT IN USE
AC 3V	FL tube filament voltage (VF)
AC 9V	Micro-computer, audio, motor section Vcc

SECTION 2
GENERAL

This section is extracted from instruction manual.



1 DUBBING MODE button and indicator
2 CD SYNCHRO (CD synchronized recording) button and indicator
3 Cassette holder (Deck A)
4 Cassette holder (Deck B)
5 Tape operation buttons (for Deck B only)
  PAUSE ❚❚
  REC ● (recording)
6 Tape operation buttons (for Deck A and B)
  AMS ◀◀ ▶▶ : Fast winding
  ■ : Stop
  ▷ : Forward play
  ◁ : Reverse play
7 ⏏ (eject) button (Deck B)
8 DIRECTION MODE button
9 DECK A/B selection buttons and indicators
10 Display window
11 RESET (counter reset) button
12 DOLBY NR (Dolby Noise Reduction) button
13 ⏏ (eject) button (Deck A)

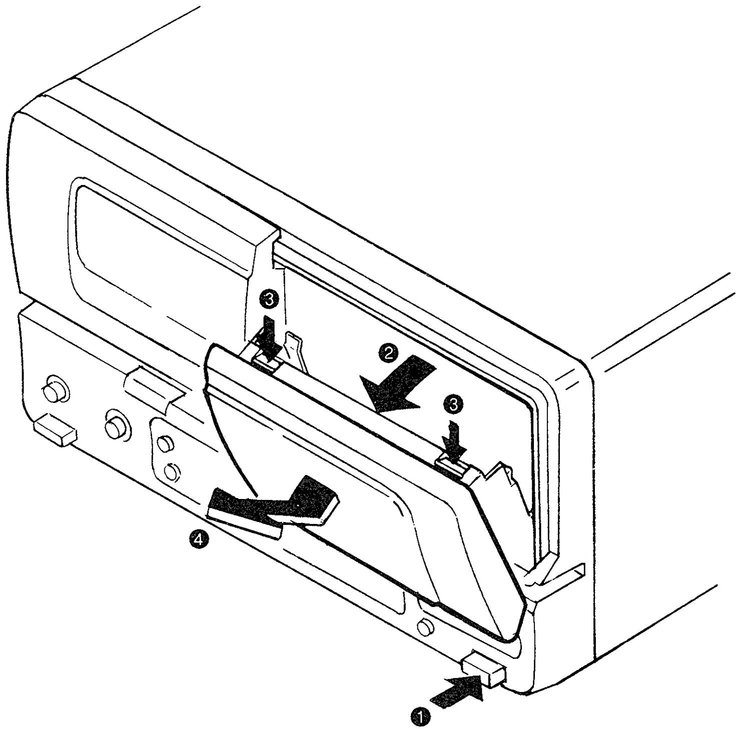
SECTION 3

DISASSEMBLY

- **Remove the following devices shown by ❶, etc. in the order of the numbers.**

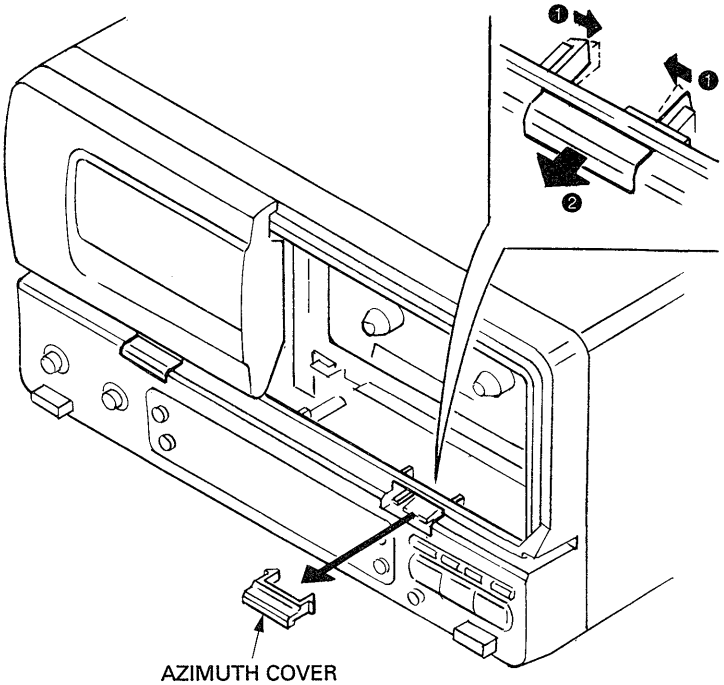
CASSETTE LID

Remove 2 hooks and remove the cassette lid.



AZIMUTH COVER

After completion of removing the cassette lid, remove the azimuth cover by pushing the hooks toward inside.



SECTION 4
ADJUSTMENTS

4-1. MECHANICAL ADJUSTMENT

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record / playback head	pinch roller
erase head	rubber belts
capstan	idler

2. Demagnetize the record / playback head with a head demagnetizer
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed in the rated power supply voltage unless otherwise noted.

Torque Measurement

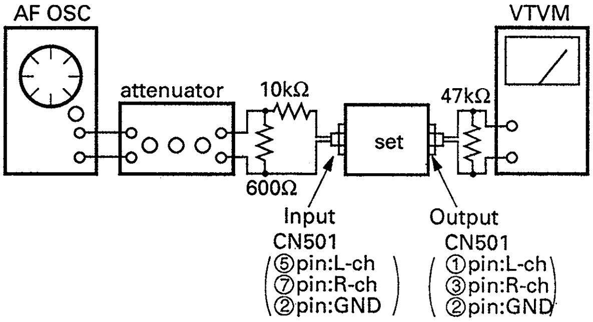
Torgue	Torque meter	Meter reading
FWD	CQ-102C	35 to 60g•cm (0.49 to 0.83 oz•inch)
FWD Back tension	CQ-102C	2 to 6g•cm (0.028 to 0.08 oz•inch)
REV	CQ-102RC	35 to 60g•cm (0.49 to 0.83 oz•inch)
REV Back tension	CQ-102RC	2 to 6g•cm (0.028 to 0.08 oz•inch)
FF, REW	CQ-201B	70 to 110g•cm (0.98 to 1.52 oz•inch)

4-2. ELECTRICAL ADJUSTMENT

Note : The adjustment should be performed in the order given in the service manual. As a rule, adjustment about playback should be performed before adjustment about recording. The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
  DOLBY NR switch : OFF
  DIRECTION MODE switch : ⇄
- Standard Record :
  Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

– Record Mode –



Standard Input Level

input terminal	Input (CN501)
source impedance	10kΩ
input level	0.39V (–6dB)

Standard Output Level

output terminal	Output (CN501)
load impedance	47kΩ
output level	0.39V (–6dB)

Test tape

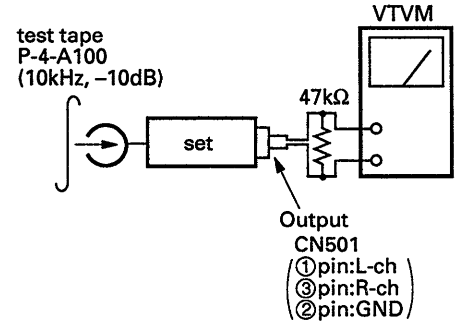
Type	Signal	Used for
P-4-A100	10kHz, –10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record / Playback Head Azimuth Adjustment

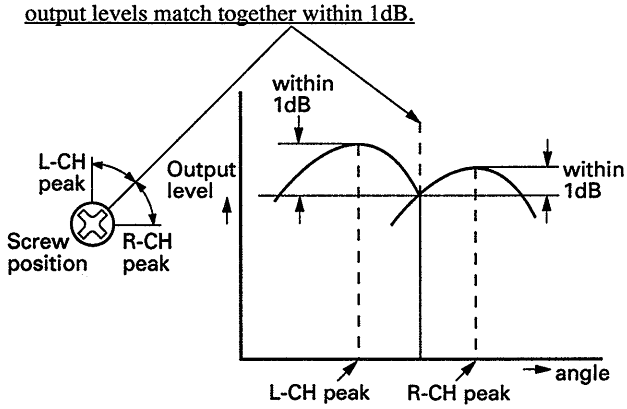
DECK A | DECK B

Procedure :

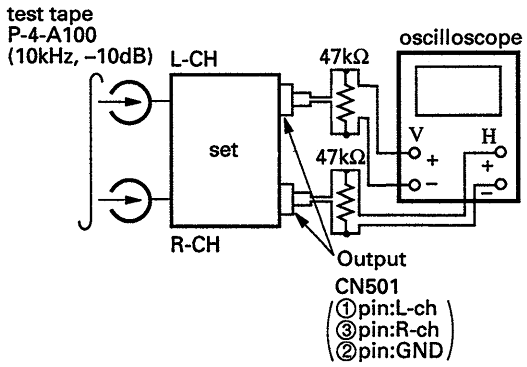
1. Mode : FWD Playback

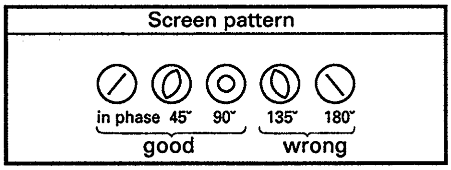

test tape
P-4-A100
(10kHz, −10dB)
set
47kΩ
VTVM
Output
CN501
①pin:L-ch
③pin:R-ch
②pin:GND

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



3. Phase Check
   Mode : FWD playback

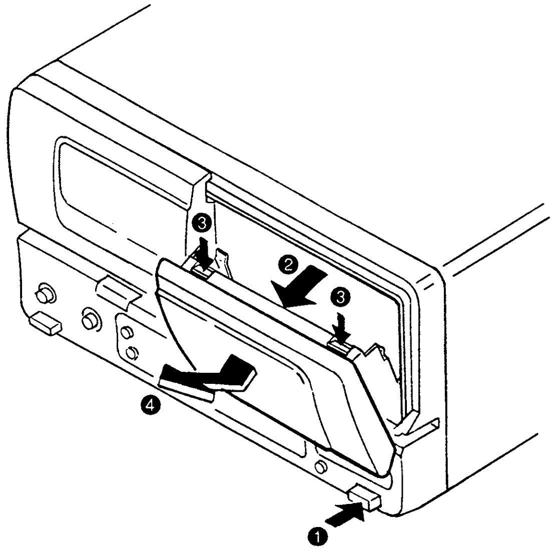

test tape
P-4-A100
(10kHz, −10dB)
L-CH
R-CH
set
47kΩ
47kΩ
oscilloscope
V
H
+
−
+
−
Output
CN501
①pin:L-ch
③pin:R-ch
②pin:GND


Screen pattern
in phase
45°
90°
135°
180°
good
wrong

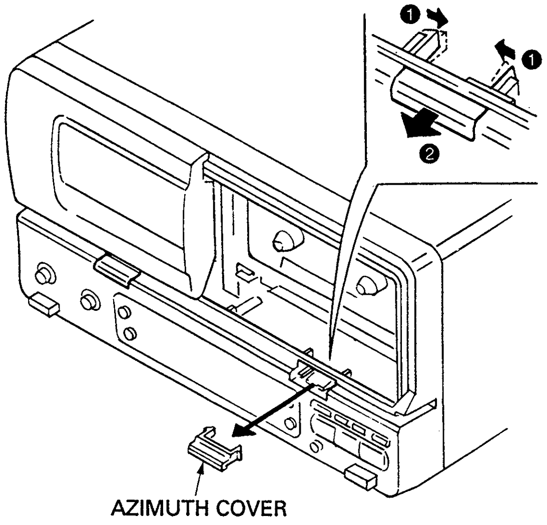
4. Set in the REV mode and repeat the step 1-3.
5. After the adjustment, lock the screws with locking compound.

Adjustment Location : Record / Playback head

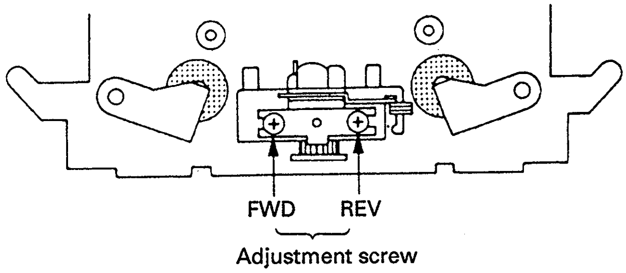
- Remove 2 hooks and remove the cassette lid.



- Remove the azimuth cover by pushing the hooks toward inside.


❶
❶
❷
AZIMUTH COVER

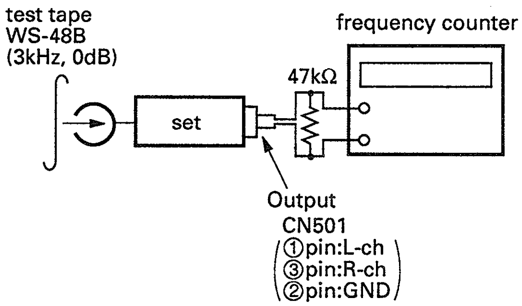
- Azimuth adjustment screw


FWD
REV
Adjustment screw

Tape Speed Adjustment DECK A DECK B

Perform high speed adjustment before normal speed adjustment

Procedure :
Mode : FWD playback


test tape
WS-48B
(3kHz, 0dB)
frequency counter
47kΩ
set
Output
CN501
①pin:L-ch
③pin:R-ch
②pin:GND

(High speed adjustment) DECK A

1. Turn ON the power switch with TP601 of the main board shorted.
2. Set a WS-48B tape onto the deck A and press the ▷ switch to activate FWD.
3. Upon beginning FWD, press the S601 of the main board.
4. Confirm that the reading of the frequency counter satisfies 6,000 ± 30 Hz.
5. Adjust the RV72 (DECK A) so that the frequency counter reading becomes 6,000±30Hz .
6. Set in the REV mode and repeat the Step 2-5.

(High speed adjustment) DECK B

1. Turn ON the power switch with TP601 of the main board shorted.
2. Set a WS-48B tape onto the deck B and press the ▷ switch to activate FWD.
3. Upon beginning FWD, press the S601 of the main board.
4. Confirm that the reading of the frequency counter satisfies 6,000 ± 30 Hz.
5. Adjust the RV72 (DECK B) so that the frequency counter reading becomes 6,000±30Hz .
6. Set in the REV mode and repeat the Step 2-5.
7. Disconnect the TP601.

Note: POWER ON/OFF switch of the HCD-H1700 is a micro-computer control switch. Therefore, if test mode cannot be actuated, disconnect the power supply plug out of the socket, plug it in again, and then repeat the operation 1.

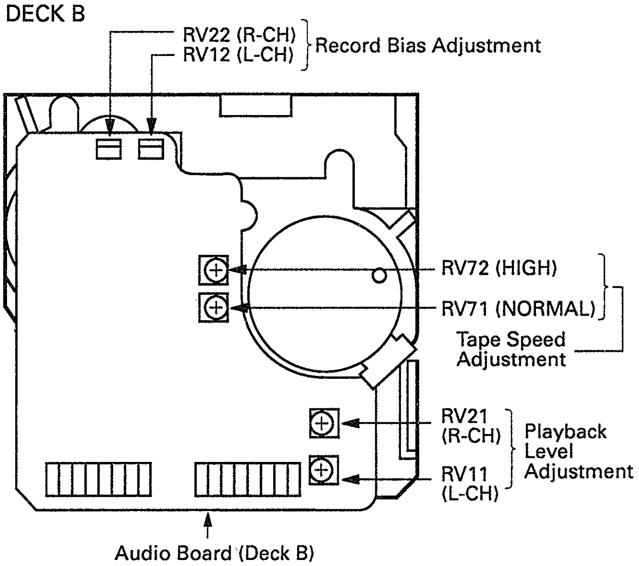
(Normal speed adjustment) DECK A DECK B

1. Set a WS-48B tape onto the deck A.
2. Press the ▷ switch to activate FWD.
3. Confirm that the reading of the frequency counter satisfies 3,000 ± 15 Hz.
4. If the above is not satisfied, adjust the RV71 so that the readings of the frequency counter for both decks A and B become 3,000 ± 15 Hz.
5. Set in the REV mode and repeat the step 1-4.

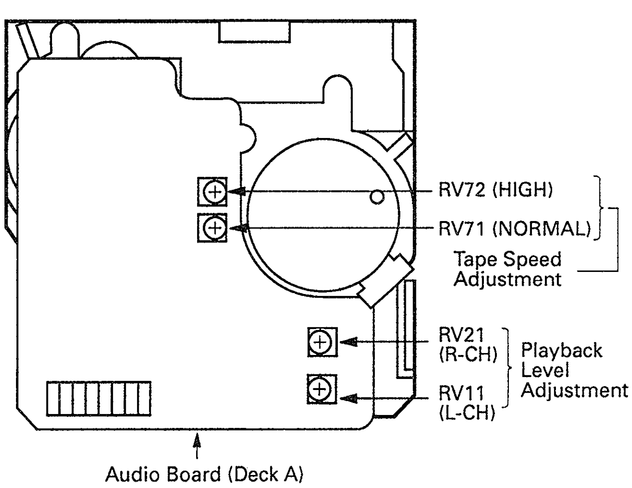
Frequency difference between the beginning and the end of the tape should be within 3%.
Frequency difference between deck A and deck B the beginning of the tape should be within 1%.

Adjustment Location : AUDIO board (DECK A),
AUDIO board (DECK B)

DECK B


RV22 (R-CH)
RV12 (L-CH)
Record Bias Adjustment
RV72 (HIGH)
RV71 (NORMAL)
Tape Speed Adjustment
RV21 (R-CH)
RV11 (L-CH)
Playback Level Adjustment
Audio Board (Deck B)

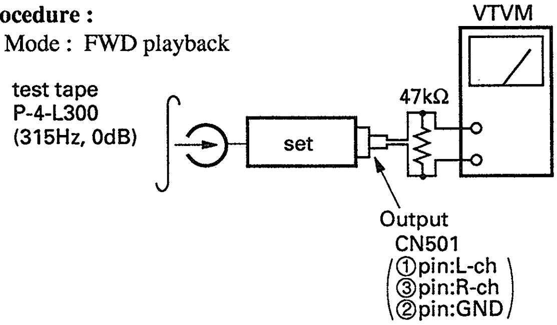
DECK A


RV72 (HIGH)
RV71 (NORMAL)
Tape Speed Adjustment
RV21 (R-CH)
RV11 (L-CH)
Playback Level Adjustment
Audio Board (Deck A)

Playback Level Adjustment DECK A DECK B

Procedure :

Mode : FWD playback


VTVM
test tape
P-4-L300
(315Hz, 0dB)
47kΩ
set
Output
CN501
①pin:L-ch
③pin:R-ch
②pin:GND

Adjust RV11 (L-CH), RV21 (R-CH) so that the reading on VTVM meets the adjustment limits below.

Ajustment Limits :

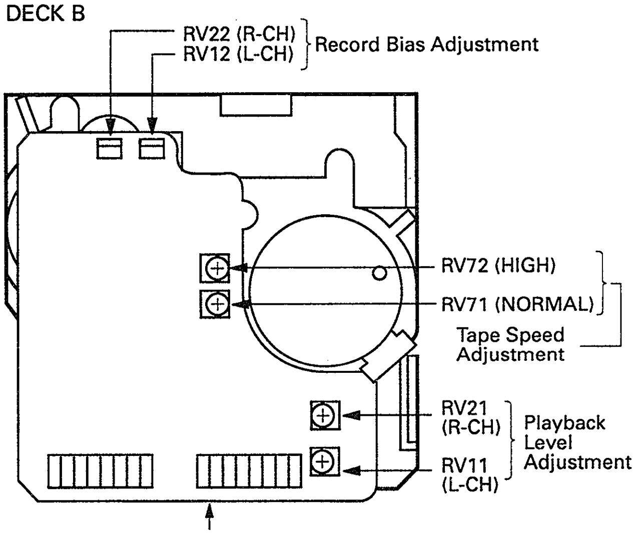
Output level : –6±1dB (0.35–0.44V)

Level difference between channels : less than 1dB

Confirm that the OUTPUT level does not change in playback mode while changing the mode from playback to stop several times.

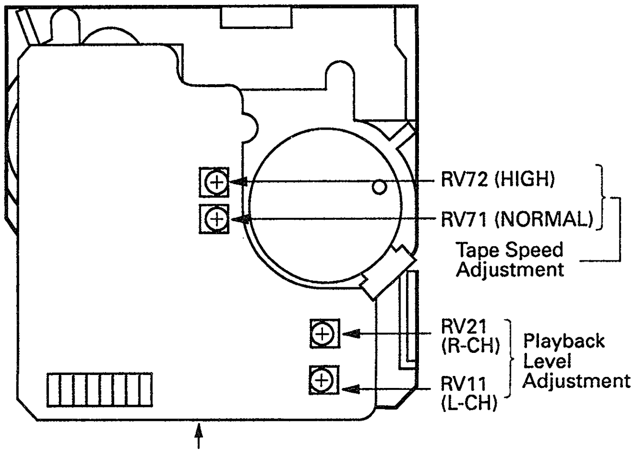
Adjustment Location : AUDIO board (DECK A),
AUDIO board (DECK B)

DECK B


RV22 (R-CH)
RV12 (L-CH)
Record Bias Adjustment
RV72 (HIGH)
RV71 (NORMAL)
Tape Speed Adjustment
RV21 (R-CH)
RV11 (L-CH)
Playback Level Adjustment

Audio Board (Deck B)

DECK A


RV72 (HIGH)
RV71 (NORMAL)
Tape Speed Adjustment
RV21 (R-CH)
RV11 (L-CH)
Playback Level Adjustment

Audio Board (Deck A)

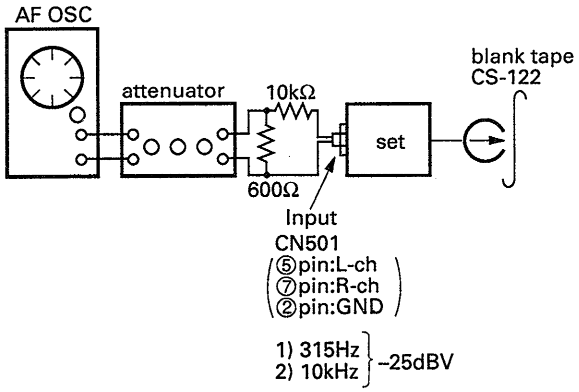
Record Bias Adjustment DECK B

Setting :

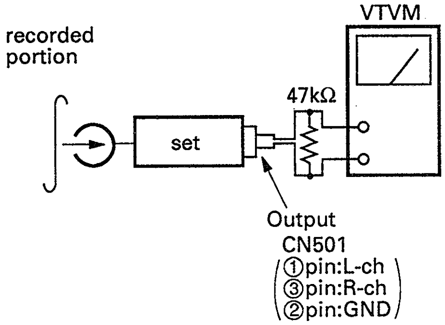
REC LEVEL control : Standard Record (See page 4).

Procedure :

1. Mode : record

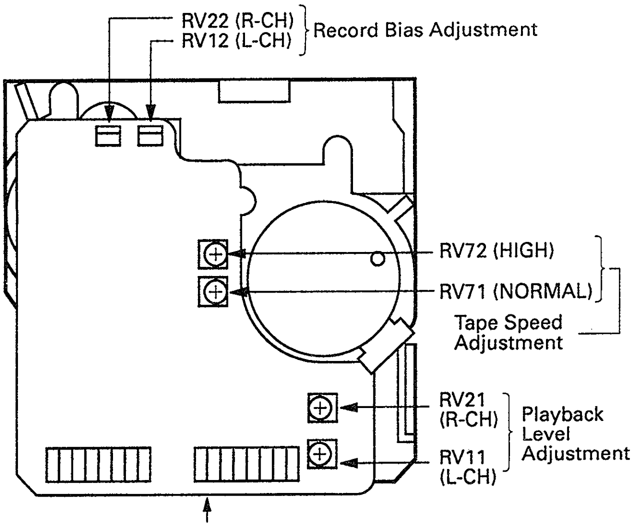

AF OSC
attenuator
10kΩ
600Ω
set
blank tape
CS-122
Input
CN501
⑤pin:L-ch
⑦pin:R-ch
②pin:GND
1) 315Hz
2) 10kHz
–25dBV

2. Mode : FWD playback


VTVM
recorded portion
47kΩ
set
Output
CN501
①pin:L-ch
③pin:R-ch
②pin:GND

3. Playback the signal recorded in step 1.
   Confirm that the 10kHz playback output is 0±0.5dB relative to the 315Hz output. If necessary, adjust RV12 (L-CH), RV22 (R-CH) and repeat the steps given above.

Adjustment Location : AUDIO board (DECK B)


RV22 (R-CH)
RV12 (L-CH)
Record Bias Adjustment
RV72 (HIGH)
RV71 (NORMAL)
Tape Speed Adjustment
RV21 (R-CH)
RV11 (L-CH)
Playback Level Adjustment

Audio Board (Deck B)

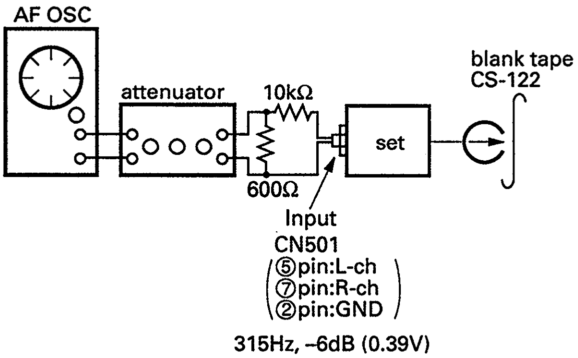
Record Level Adjustment DECK B

Setting :

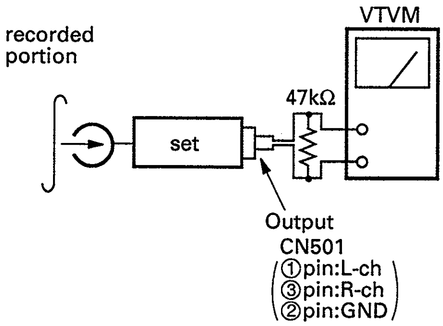
REC LEVEL control : Standard Record (See page 4).

Procedure :

1. Mode : record


AF OSC
attenuator
10kΩ
600Ω
set
blank tape
CS-122
Input
CN501
⑤pin:L-ch
⑦pin:R-ch
②pin:GND
315Hz, –6dB (0.39V)

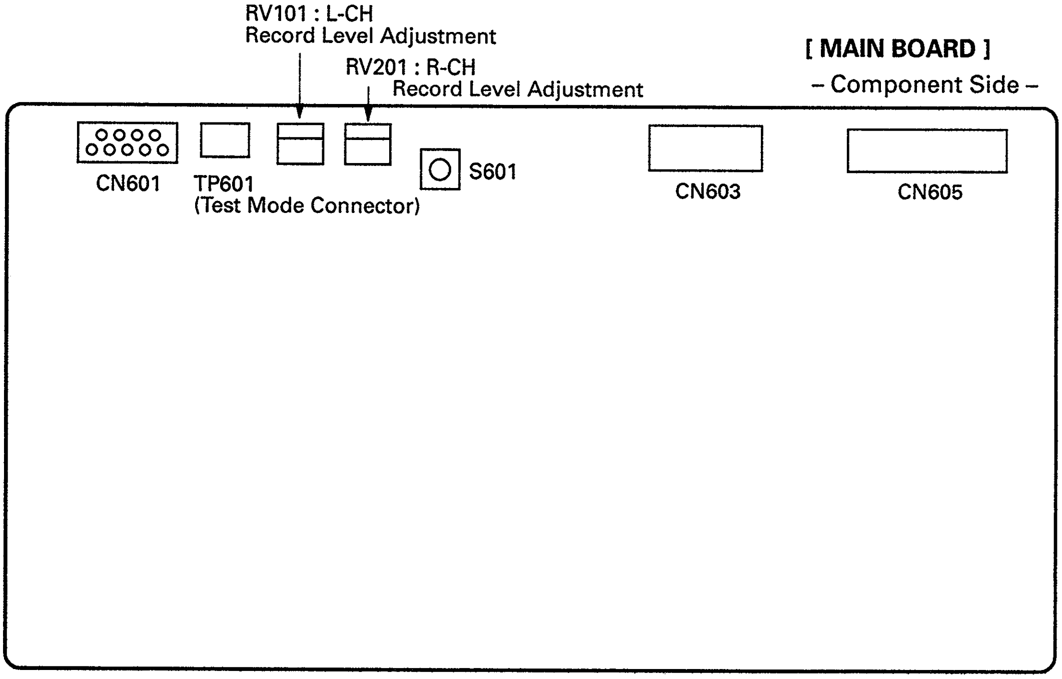
2. Mode : FWD playback


recorded
portion
set
VTVM
47kΩ
Output
CN501
①pin:L-ch
③pin:R-ch
②pin:GND

3. Playback the signal recorded in step 1.
Confirm that the signal leve is within the adjustment limits below.
If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the steps given above.

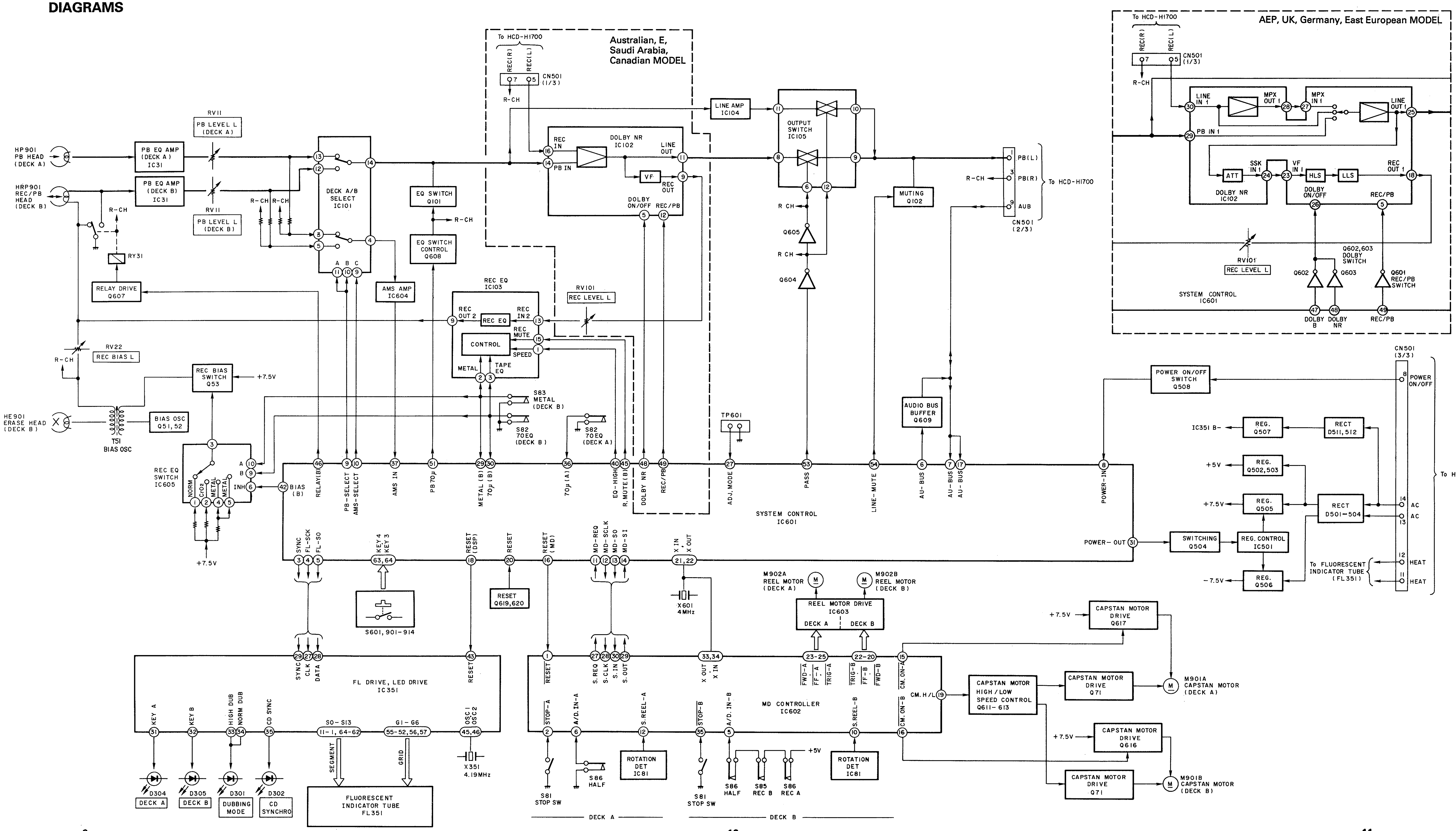
Adjustment Limits : –6dB±0.5dB (0.37–0.42V)

Adjustment Location : MAIN board


RV101 : L-CH
Record Level Adjustment
RV201 : R-CH
Record Level Adjustment
[MAIN BOARD]
– Component Side –
CN601
TP601
(Test Mode Connector)
S601
CN603
CN605

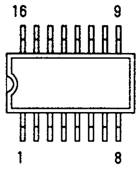
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM


Australian, E, Saudi Arabia, Canadian MODEL
AEP, UK, Germany, East European MODEL
To HCD-H1700
REC(R)
REC(L)
CN501 (1/3)
R-CH
HP901 PB HEAD (DECK A)
HRP901 REC/PB HEAD (DECK B)
PB EQ AMP (DECK A) IC31
PB EQ AMP (DECK B) IC31
RV11 PB LEVEL L (DECK A)
RV11 PB LEVEL L (DECK B)
DECK A/B SELECT IC101
RY31
RELAY DRIVE Q607
RV22 REC BIAS L
REC BIAS SWITCH Q53
+7.5V
HE901 ERASE HEAD (DECK B)
T51 BIAS OSC
BIAS OSC Q51,52
REC EQ SWITCH IC605
NORM
CrO2
METAL
EQ SWITCH Q101
EQ SWITCH CONTROL Q608
AMS AMP IC604
REC EQ IC103
REC OUT 2
REC EQ
REC IN 2
REC MUTE
CONTROL
SPEED
METAL
TAPE EQ
S83 METAL (DECK B)
S82 70EQ (DECK B)
S82 70EQ (DECK A)
RV101 REC LEVEL L
LINE AMP IC104
DOLBY NR IC102
REC IN
PB IN
LINE OUT
VF
REC OUT
DOLBY ON/OFF
REC/PB
OUTPUT SWITCH IC105
Q605
Q604
R CH
MUTING Q102
PB(L)
PB(R)
AUB
CN501 (2/3)
To HCD-H1700
TP601
AUDIO BUS BUFFER Q609
RELAY(B)
PB-SELECT
AMS-SELECT
AMS IN
PB70μ
METAL (B)
70μ (B)
70μ (A)
EQ-HIGH
R.MUTE (B)
DOLBY NR
REC/PB
ADJ. MODE
PASS
LINE-MUTE
AU-BUS
POWER-IN
BIAS (B)
SYSTEM CONTROL IC601
POWER-OUT
SYNC
FL-SCK
FL-SO
KEY4
KEY3
RESET (DSP)
RESET
RESET (MD)
MD-REQ
MD-SCLK
MD-SO
MD-SI
X IN
X OUT
S601, 901-914
RESET Q619,620
X601 4MHz
LINE IN 1
MPX OUT 1
MPX IN 1
LINE OUT 1
PB IN 1
ATT
SSK IN 1
VF IN 1
HLS
LLS
REC OUT 1
DOLBY NR IC102
DOLBY ON/OFF
RV101 REC LEVEL L
Q602,603 DOLBY SWITCH
Q602
Q603
Q601 REC/PB SWITCH
SYSTEM CONTROL IC601
DOLBY B
DOLBY NR
POWER ON/OFF SWITCH Q508
CN501 (3/3)
POWER ON/OFF
IC351 B-
REG. Q507
RECT D511,512
+5V
REG. Q502,503
+7.5V
REG. Q505
RECT D501-504
AC
SWITCHING Q504
REG. CONTROL IC501
-7.5V
REG. Q506
To FLUORESCENT INDICATOR TUBE (FL351)
HEAT
M902A REEL MOTOR (DECK A)
M902B REEL MOTOR (DECK B)
REEL MOTOR DRIVE IC603
DECK A
DECK B
CAPSTAN MOTOR DRIVE Q617
CAPSTAN MOTOR HIGH/LOW SPEED CONTROL Q611-613
CAPSTAN MOTOR DRIVE Q71
M901A CAPSTAN MOTOR (DECK A)
CAPSTAN MOTOR DRIVE Q616
M901B CAPSTAN MOTOR (DECK B)
FL DRIVE, LED DRIVE IC351
SYNC
CLK
DATA
KEY A
KEY B
HIGH DUB
NORM DUB
CD SYNC
S0-S13
G1-G6
OSC1
OSC2
SEGMENT
GRID
X351 4.19MHz
FLUORESCENT INDICATOR TUBE FL351
D304 DECK A
D305 DECK B
D301 DUBBING MODE
D302 CD SYNCHRO
MD CONTROLLER IC602
S.REQ
S.CLK
S.IN
S.OUT
X OUT
X IN
FWD-A
FF-A
TRIG-A
TRIG-B
FF-B
FWD-B
CM.ON-A
CM.H/L
CM.ON-B
STOP-A
A/D.IN-A
S.REEL-A
STOP-B
A/D.IN-B
S.REEL-B
ROTATION DET IC81
S81 STOP SW
S86 HALF
S85 REC B
S86 REC A
DECK A
DECK B

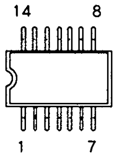
5-2. SEMICONDUCTOR LEAD LAYOUTS

CD4052BCM
CXA1101M
CXA1578M
HD14053BFP



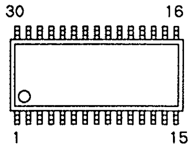
(TOP VIEW)

CD4066BCM



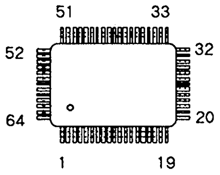
(TOP VIEW)

CXA1331M



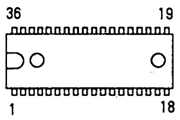
(TOP VIEW)

HD614023-FA93


51
33
52
32
64
20
1
19

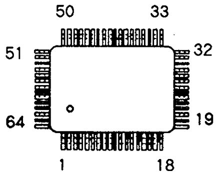
TOP VIEW

M50925-482FP



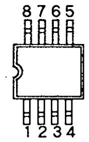
(TOP VIEW)

M50944-128FP


50
33
51
32
64
19
1
18

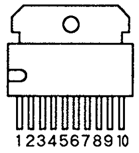
TOP VIEW

RC4558PS
μ PC4570G2



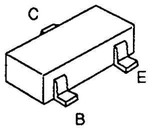
(TOP VIEW)

TA7272P

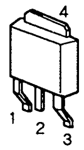

1 2 3 4 5 6 7 8 9 10

Marking side view

UN2211
2SC1602-F
2SC3397
2SC3900
2SC4154-F

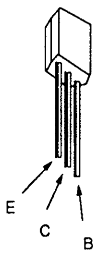


2SA1341

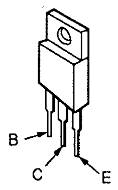


1 : BASE
2 : COLLECTOR
3 : EMITTER
4 : COLLECTOR

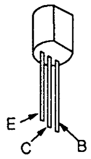
2SA1344



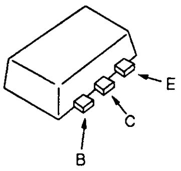
2SB1094-LK
2SD2012



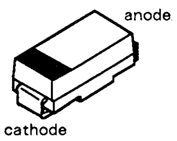
2SB1116A-L



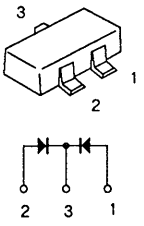
2SB1121-ST
2SD1622-S



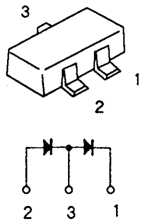
EC10DS2


anode
cathode

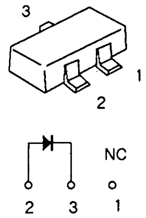
MA152WK



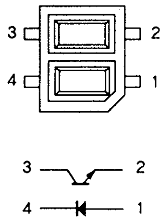
MA153



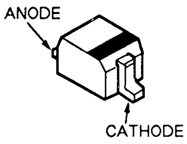
MA3056L
MA3068L
MA3082
MA3091
MA3180



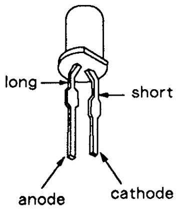
NJL5165K-B



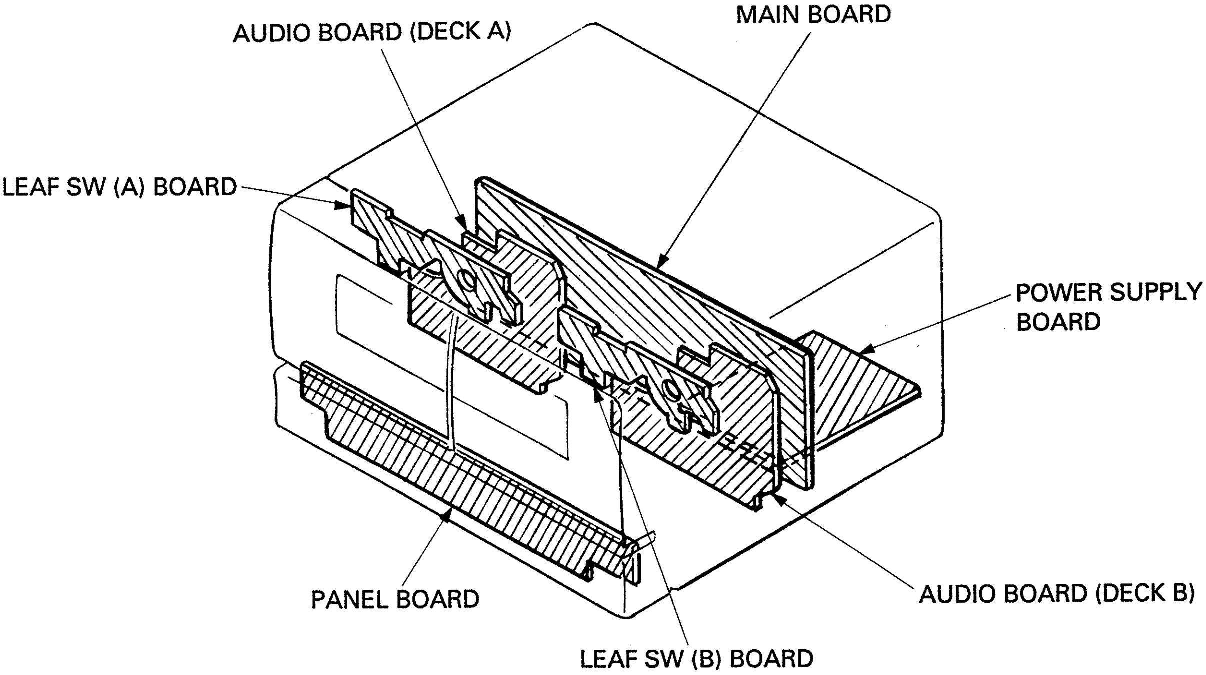
1SS355


ANODE
CATHODE

SEL2210S-C


long
short
anode
cathode

5-3. CIRCUIT BOARDS LOCATION


AUDIO BOARD (DECK A)
MAIN BOARD
LEAF SW (A) BOARD
POWER SUPPLY BOARD
PANEL BOARD
AUDIO BOARD (DECK B)
LEAF SW (B) BOARD

5-4. PRINTED WIRING BOARDS (MD/POWER SUPPLY SECTION) – AEP, UK, Germany, East European Model –

• See page 12 for semiconductor lead layouts.

● SEMICONDUCTOR LOCATION

(MD/POWER SUPPLY SECTION)

– AEP, UK, Germany, East European Model –

(AUDIO BOARD (DECK A), LEAF SW (A) BOARD)

Ref. No.	Location
IC31	G-2
IC81	B-4
Q71	G-4

(AUDIO BOARD (DECK B), LEAF SW (B) BOARD)

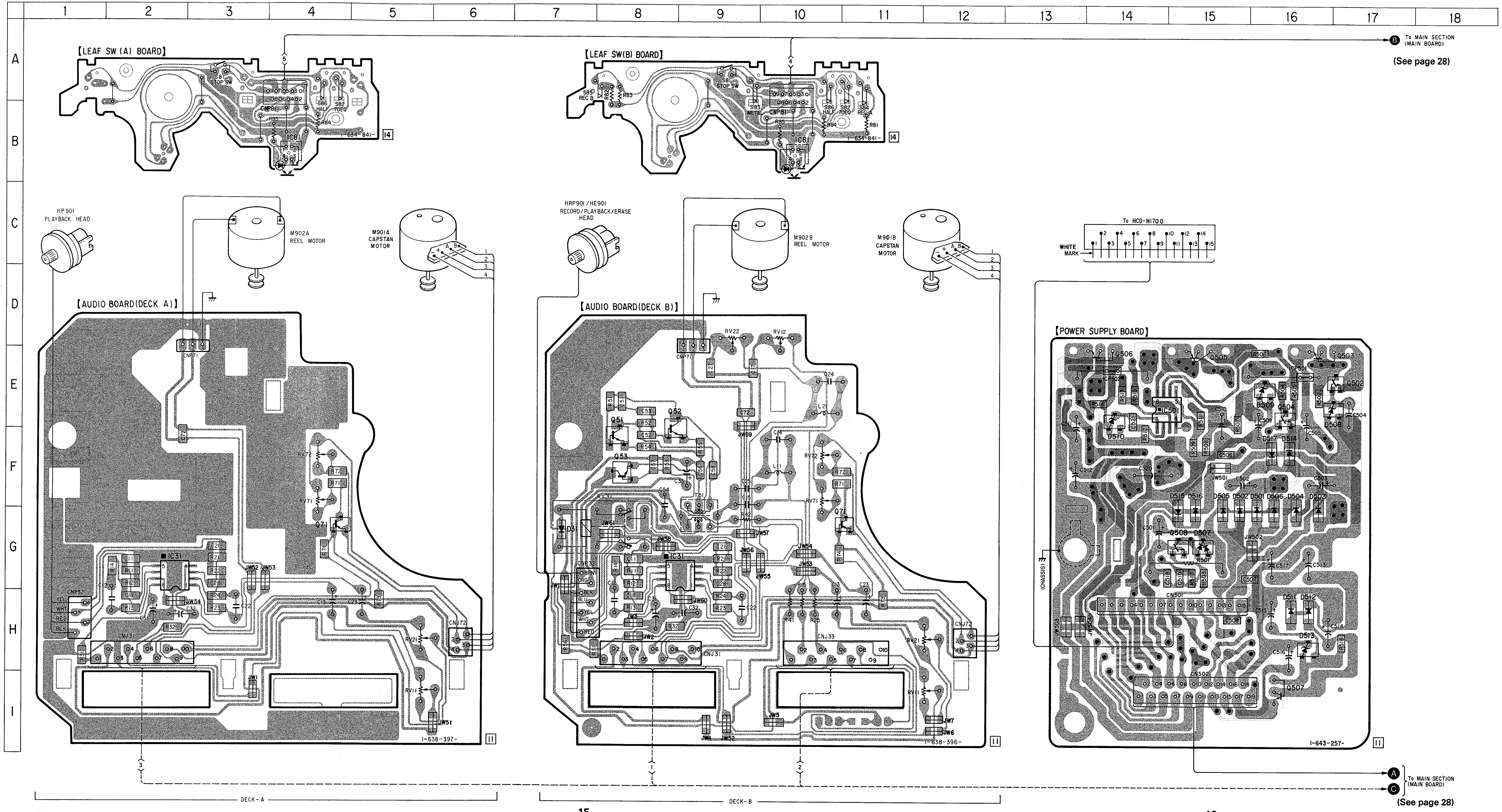
Ref. No.	Location
D31	G-7
IC31	G-8
IC81	B-10
Q51	E-8
Q52	E-8
Q53	F-8
Q71	G-11

(POWER SUPPLY BOARD)

Ref. No.	Location	Ref. No.	Location
D501	F-16	D515	F-15
D502	F-15	D516	F-15
D503	F-16	D517	F-16
D504	F-16		
D505	F-15	IC501	E-14
D506	F-16	Q502	E-17
D507	G-15	Q503	E-16
D508	E-16	Q504	E-16
D509	E-16	Q505	E-15
D510	E-14	Q506	E-14
D511	H-16	Q507	I-16
D512	H-16	Q508	G-15
D513	H-16		
D514	F-16		

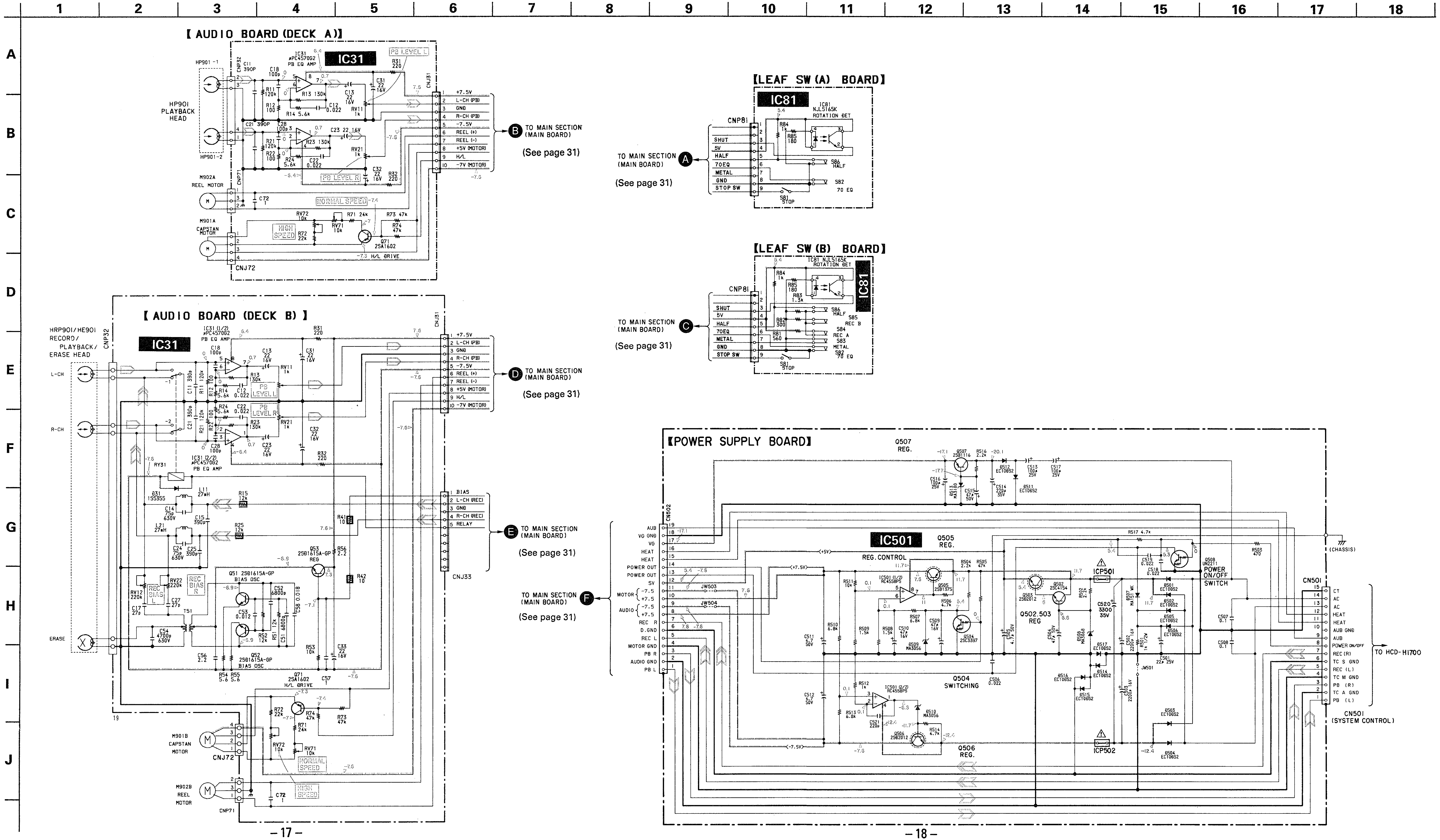
Notes on printed wiring boards:

- •o——: Indicated a lead wire mounted on the component side
- ■ : Parts mounted on the conductor side
- ● : Through hole
- ▨ : Pattern from the side which enables seeing
- ▨ : Pattern of the rear side



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I
【LEAF SW (A) BOARD】
【LEAF SW(B) BOARD】
To MAIN SECTION (MAIN BOARD)
(See page 28)
HP901 PLAYBACK HEAD
M902A REEL MOTOR
M901A CAPSTAN MOTOR
HRP901/HE901 RECORD/PLAYBACK/ERASE HEAD
M902B REEL MOTOR
M901B CAPSTAN MOTOR
To HCD-H1700
WHITE MARK
【AUDIO BOARD(DECK A)】
【AUDIO BOARD(DECK B)】
【POWER SUPPLY BOARD】
(CHASSIS)
1-634-841-
1-638-397-
1-638-396-
1-643-257-
To MAIN SECTION (MAIN BOARD)
(See page 28)
DECK-A
DECK-B

5-5. SCHEMATIC DIAGRAM (MD/POWER SUPPLY SECTION) – AEP, UK, Germany, East European Model –


1
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14
15
16
17
18
A
B
C
D
E
F
G
H
I
J
【AUDIO BOARD (DECK A)】
IC31
HP901 PLAYBACK HEAD
M902A REEL MOTOR
M901A CAPSTAN MOTOR
CNJ72
CNP32
CNP71
CNJ31
PB LEVEL L
PB LEVEL R
NORMAL SPEED
HIGH SPEED
Q71 2SA1602
H/L DRIVE
+7.5V
L-CH (PB)
GND
R-CH (PB)
-7.5V
REEL (+)
REEL (-)
+5V (MOTOR)
H/L
-7V (MOTOR)
TO MAIN SECTION (MAIN BOARD)
(See page 31)
【LEAF SW (A) BOARD】
IC81
IC81 NJL5165K ROTATION DET
CNP81
SHUT
5V
HALF
70EQ
METAL
GND
STOP SW
S81 STOP
S86 HALF
S82 70 EQ
【LEAF SW (B) BOARD】
S85 REC B
S84 REC A
S83 METAL
【AUDIO BOARD (DECK B)】
HRP901/HE901 RECORD/PLAYBACK/ERASE HEAD
L-CH
R-CH
ERASE
IC31 (1/2) μPC4570G2 PB EQ AMP
IC31 (2/2) μPC4570G2 PB EQ AMP
RY31
Q31 1SS355
Q51 2SD1615A-GP BIAS OSC
Q52 2SD1615A-GP BIAS OSC
Q53 2SD1615A-GP
T51
REC BIAS L
REC BIAS R
BIAS
L-CH (REC)
R-CH (REC)
RELAY
CNJ33
M901B CAPSTAN MOTOR
M902B REEL MOTOR
【POWER SUPPLY BOARD】
IC501
Q507 REG.
Q505 REG.
REG. CONTROL
Q502,503 REG
Q504 SWITCHING
Q506 REG.
Q508 POWER ON/OFF SWITCH
ICP501
ICP502
CN502
CN501
CN501 (SYSTEM CONTROL)
(CHASSIS)
AUB
VG GND
VG
HEAT
POWER OUT
5V
MOTOR
AUDIO
D.GND
REC R
REC L
MOTOR GND
PB R
AUDIO GND
PB L
CT
AC
AUB GND
POWER ON/OFF
REC (R)
TC S GND
REC (L)
TC M GND
PB (R)
TC A GND
PB (L)
TO HCD-H1700

Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- ⊣WW⊢: Fuse resistor

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

- ▭ : B+ Line
- ▫▫▫▫ : B– Line
- ⬚ : Adjustment for repair
- Voltage are dc with respect to ground under no-signal conditions.
- No mark : PLAY
  ( ) : REC
- Voltages are taken with a VOM (input impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Signal path
  - ⟩ : PLAY (DECK A)
  - ⟩ : PLAY (DECK B)
  - ⟩⟩ : REC (DECK B)

● SEMICONDUCTOR LOCATION

– Canadian, Australian, E, Saudi Arabia Model –

(AUDIO BOARD (DECK A), LEAF SW (A) BOARD)

Ref. No.	Location
IC31	G-2
IC81	B-4
Q71	G-4

(AUDIO BOARD (DECK B), LEAF SW (B) BOARD)

Ref. No.	Location
D31	G-7
IC31	G-8
IC81	B-10
Q51	E-8
Q52	E-8
Q53	F-8
Q71	G-11

(POWER SUPPLY BOARD)

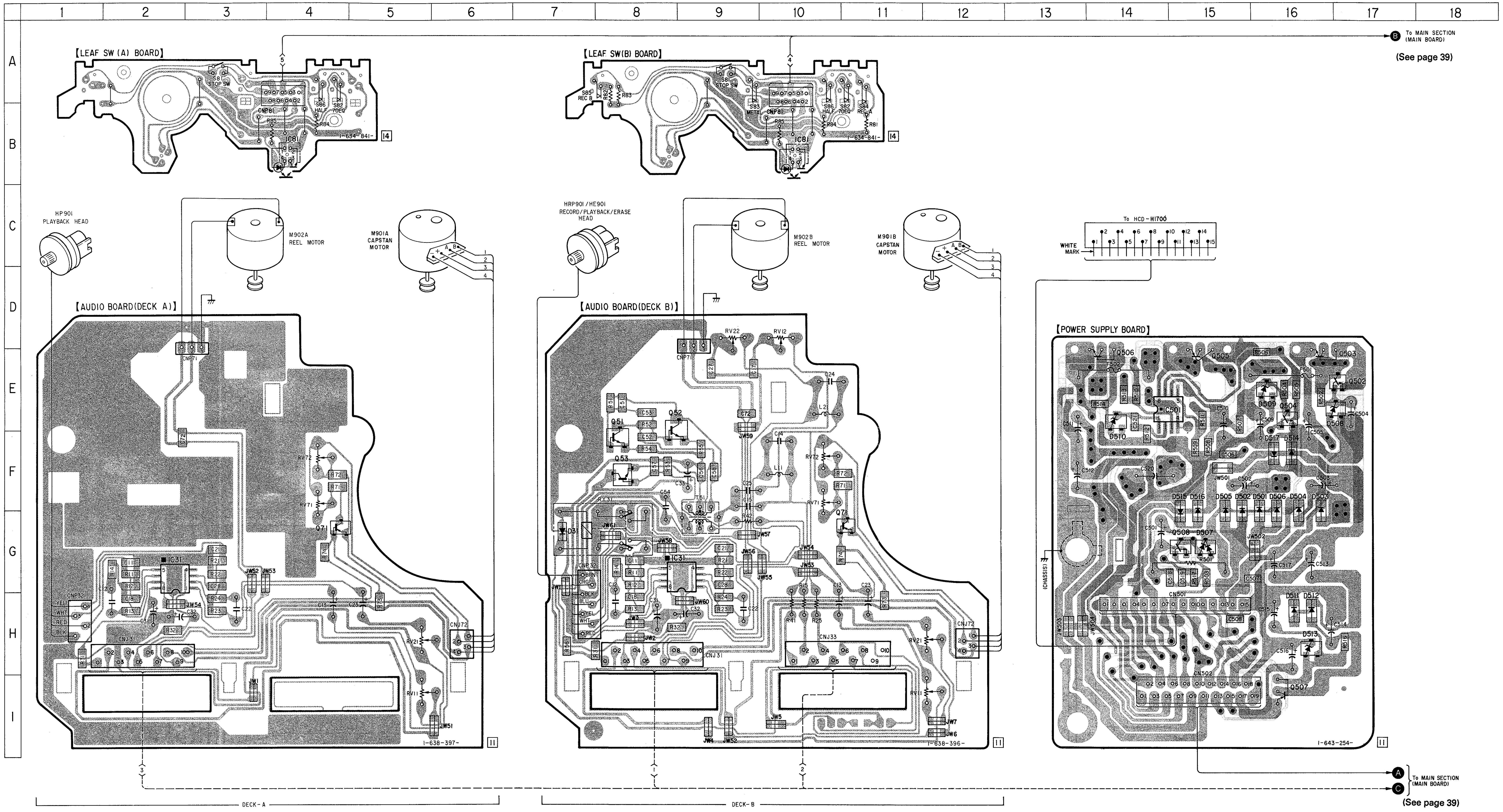
Ref. No.	Location	Ref. No.	Location
D501	F-16	D515	F-15
D502	F-15	D516	F-15
D503	F-16	D517	F-16
D504	F-16		
D505	F-15	IC501	E-14
D506	F-16	Q502	E-17
D507	G-15	Q503	E-16
D508	E-16	Q504	E-16
D509	E-16	Q505	E-15
D510	E-14	Q506	E-14
D511	H-16	Q507	I-16
D512	H-16	Q508	G-15
D513	H-16		
D514	F-16		

Notes on printed wiring boards:

- ∘——: Indicated a lead wire mounted on the component side
- ■ : Parts mounted on the conductor side
- ● : Through hole
- ▨ : Pattern from the side which enables seeing
- ░ : Pattern of the rear side

5-6. PRINTED WIRING BOARDS (MD/POWER SUPPLY SECTION) – Canadian, Australian, E, Saudi Arabia Model –

• See page 12 for semiconductor lead layouts and 13 for circuit boards location.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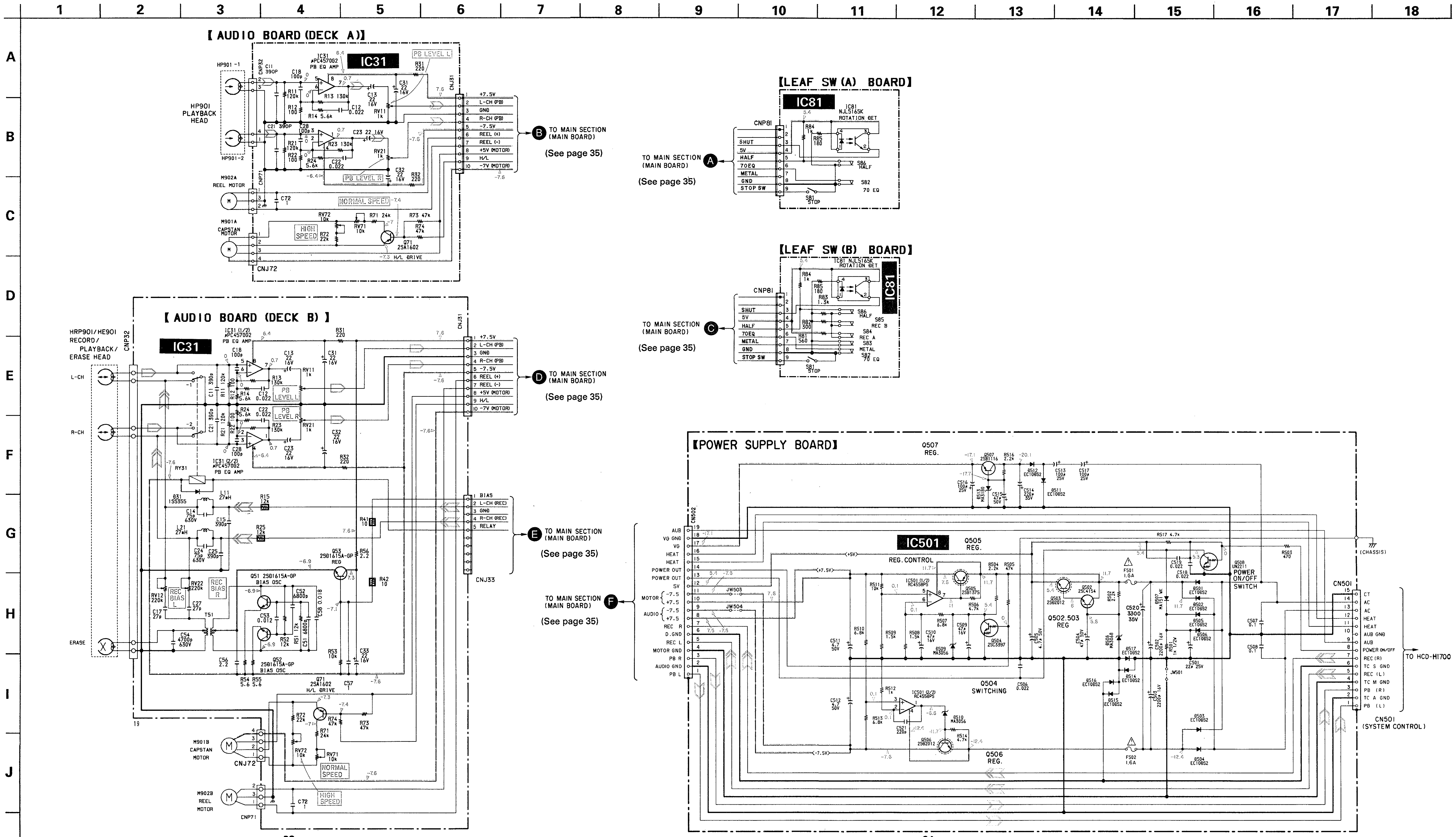
A
B
C
D
E
F
G
H
I
【LEAF SW (A) BOARD】
【LEAF SW (B) BOARD】
S81 STOP SW
S86 HALF
S82 70EQ
S83 METAL
S84 REC A
S85 REC B
CNP81
IC81
1-634-841-
14
HP901 PLAYBACK HEAD
HRP901/HE901 RECORD/PLAYBACK/ERASE HEAD
M902A REEL MOTOR
M902B REEL MOTOR
M901A CAPSTAN MOTOR
M901B CAPSTAN MOTOR
To HCD-H1700
WHITE MARK
【AUDIO BOARD (DECK A)】
【AUDIO BOARD (DECK B)】
【POWER SUPPLY BOARD】
CNP71
CNP32
CNJ31
CNJ33
CNJ72
IC31
Q51
Q52
Q53
Q71
D31
RV11
RV12
RV21
RV22
RV71
RV72
1-638-397-
1-638-396-
1-643-254-
11
IC501
CN501
CN502
(CHASSIS)
To MAIN SECTION (MAIN BOARD)
(See page 39)
DECK-A
DECK-B

5-7. SCHEMATIC DIAGRAM (MD/POWER SUPPLY SECTION) – Canadian, Australian, E, Saudi Arabia Model –


1
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9
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11
12
13
14
15
16
17
18
A
B
C
D
E
F
G
H
I
J
【AUDIO BOARD (DECK A)】
IC31
HP901 PLAYBACK HEAD
M902A REEL MOTOR
M901A CAPSTAN MOTOR
CNJ72
B TO MAIN SECTION (MAIN BOARD)
(See page 35)
【AUDIO BOARD (DECK B)】
HRP901/HE901 RECORD/PLAYBACK/ERASE HEAD
L-CH
R-CH
ERASE
D TO MAIN SECTION (MAIN BOARD)
(See page 35)
E TO MAIN SECTION (MAIN BOARD)
(See page 35)
CNJ33
M901B CAPSTAN MOTOR
M902B REEL MOTOR
CNJ72
CNP71
【LEAF SW (A) BOARD】
IC81
A TO MAIN SECTION (MAIN BOARD)
(See page 35)
【LEAF SW (B) BOARD】
IC81
C TO MAIN SECTION (MAIN BOARD)
(See page 35)
【POWER SUPPLY BOARD】
IC501
F TO MAIN SECTION (MAIN BOARD)
(See page 35)
CN501 (SYSTEM CONTROL)
TO HCD-H1700

Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- ⊡: Fuse resistor

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- ▭ : B+ Line
- ▫▫▫▫ : B– Line
- ⬚ : Adjustment for repair
- Voltage are dc with respect to ground under no -signal conditions.
- No mark : PLAY
  ( ) : REC
- Voltages are taken with a VOM (input impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Signal path
  ⟩ : PLAY (DECK A)
  ⟩ : PLAY (DECK B)
  ⟫ : REC (DECK B)

● SEMICONDUCTOR LOCATION

– AEP, UK, Germany, East European Model –

(MAIN SECTION)

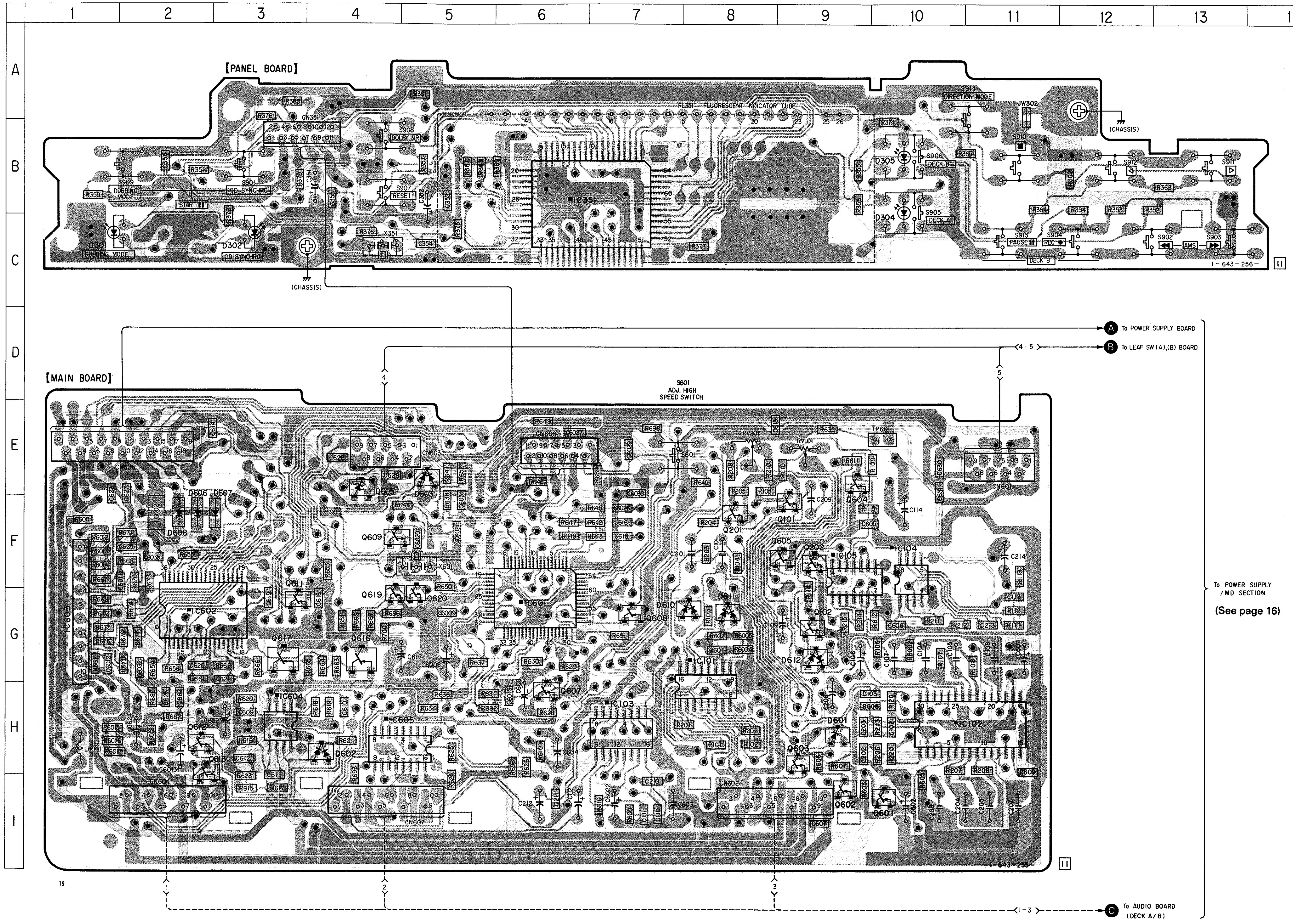
Ref. No.	Location
D301	C-1
D302	C-3
D304	C-10
D305	B-10
D601	H-10
D602	H-4
D603	E-5
D605	E-4
D606	F-2
D607	F-3
D608	F-2
D610	G-8
D611	G-8
D612	G-9
IC101	G-8
IC102	H-11
IC103	H-7
IC104	F-10
IC105	F-9
IC351	B-6
IC601	G-6
IC602	G-2
IC603	G-1
IC604	H-3
IC605	H-4
Q101	F-9
Q102	G-9
Q201	F-8
Q202	F-9
Q601	I-10
Q602	I-9
Q603	H-9
Q604	E-9
Q605	F-9
Q607	H-6
Q608	G-7
Q609	F-4
Q611	G-3
Q612	H-2
Q613	H-2
Q616	G-4
Q617	G-3
Q619	G-4
Q620	G-5

Notes on printed wiring boards:

- •—○ : Indicated a lead wire mounted on the component side
- ■ : Parts mounted on the conductor side
- ● : Through hole
- ▨ : Pattern from the side which enables seeing
- ░ : Pattern of the rear side

5-8. PRINTED WIRING BOARDS (MAIN SECTION)

– AEP, UK, Garmany, East European Model – • See page 12 for semiconductor lead layouts and 13 for circuit boards location.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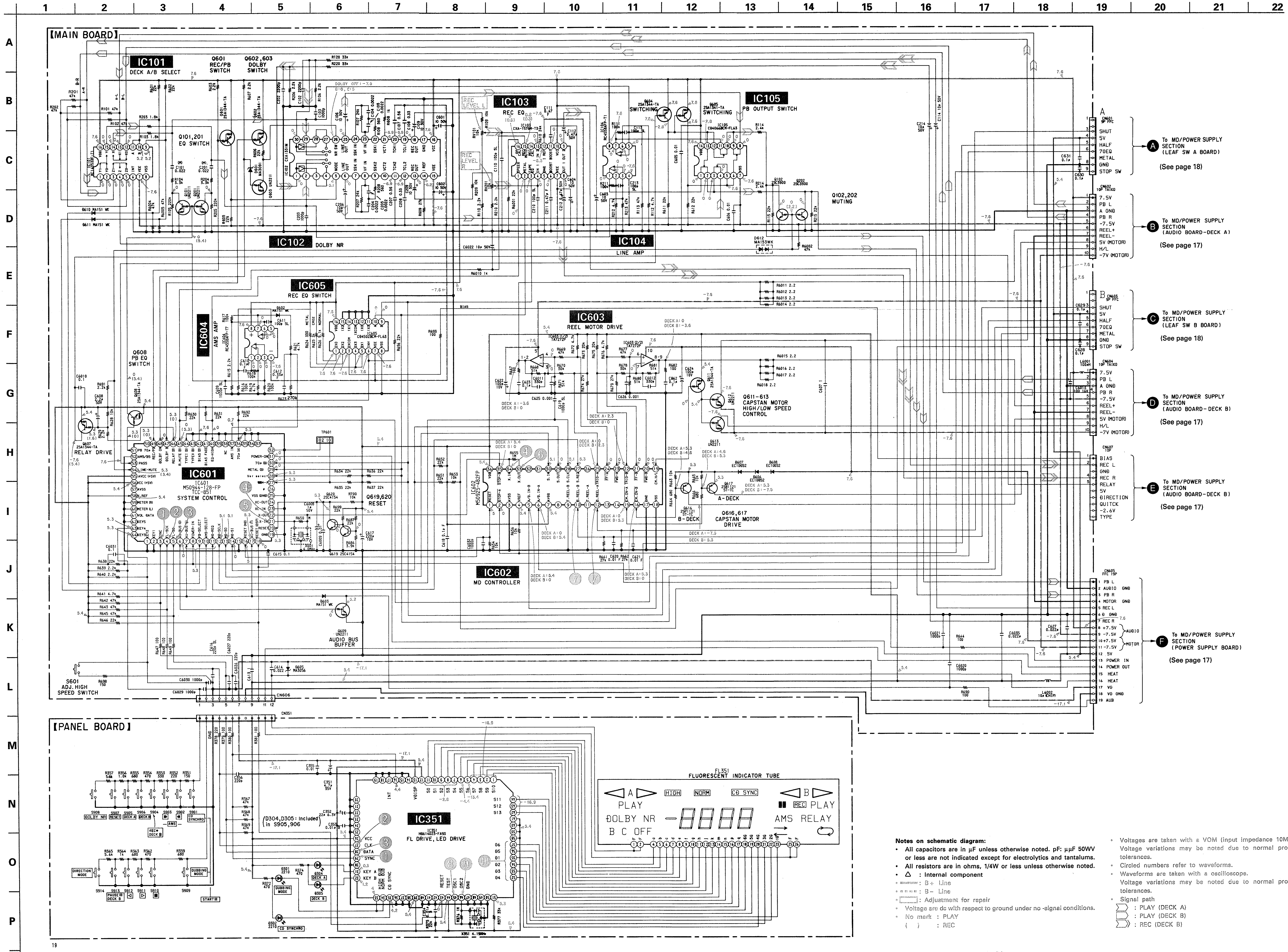
11
12
13
14
A
B
C
D
E
F
G
H
I
[PANEL BOARD]
FL351 FLUORESCENT INDICATOR TUBE
CN351
IC351
S914 DIRECTION MODE
JW302
(CHASSIS)
S909 DUBBING MODE
S901 CD SYNCHRO
S908 DOLBY NR
S907 RESET
START
S910
S906 DECK B
S905 DECK A
S912
S911
S913 PAUSE
S904 REC
S902
S903
AMS
DECK B
D301 DUBBING MODE
D302 CD SYNCHRO
D304
D305
X351
1-643-256-
11
[MAIN BOARD]
S601 ADJ. HIGH SPEED SWITCH
A To POWER SUPPLY BOARD
B To LEAF SW(A),(B) BOARD
4·5
5
4
CN601
CN606
CN603
CN604
CN605
CN607
CN602
IC601
IC602
IC603
IC604
IC605
IC101
IC102
IC103
IC104
IC105
RV101
TP601
X601
D606
D607
D608
D605
D603
D602
D610
D611
D612
D601
Q101
Q102
Q201
Q202
Q601
Q602
Q603
Q604
Q605
Q607
Q608
Q609
Q611
Q612
Q613
Q616
Q617
Q619
Q620
C214
1-643-255-
11
To POWER SUPPLY /MD SECTION
(See page 16)
1
2
3
1-3
C To AUDIO BOARD (DECK A/B)

5-9. SCHEMATIC DIAGRAM (MAIN SECTION)

– AEP, UK, Germany, East European Model –

• See page 40 for pin functions and 44 for waveforms.

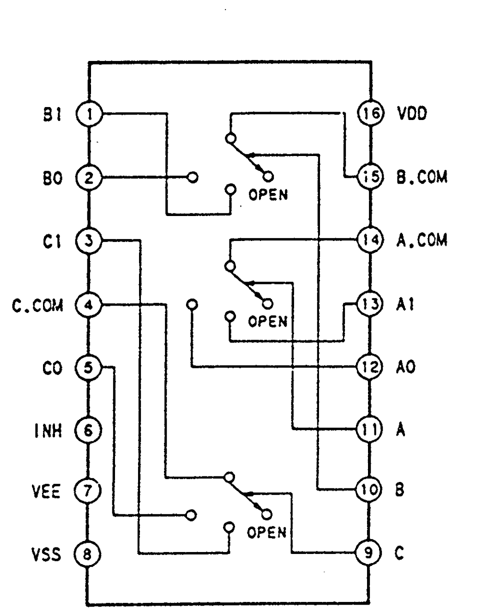


【MAIN BOARD】
IC101 DECK A/B SELECT
Q601 REC/PB SWITCH
Q602,603 DOLBY SWITCH
IC103 REC EQ
Q604 SWITCHING
Q605 SWITCHING
IC105 PB OUTPUT SWITCH
Q101,201 EQ SWITCH
IC102 DOLBY NR
IC104 LINE AMP
Q102,202 MUTING
IC605 REC EQ SWITCH
IC604 AMS AMP
IC603 REEL MOTOR DRIVE
Q608 PB EQ SWITCH
Q611-613 CAPSTAN MOTOR HIGH/LOW SPEED CONTROL
Q607 RELAY DRIVE
IC601 SYSTEM CONTROL
Q619,620 RESET
Q616,617 CAPSTAN MOTOR DRIVE
A-DECK
B-DECK
IC602 MD CONTROLLER
Q609 AUDIO BUS BUFFER
S601 ADJ. HIGH SPEED SWITCH
To MD/POWER SUPPLY SECTION (LEAF SW A BOARD) (See page 18)
To MD/POWER SUPPLY SECTION (AUDIO BOARD-DECK A) (See page 17)
To MD/POWER SUPPLY SECTION (LEAF SW B BOARD) (See page 18)
To MD/POWER SUPPLY SECTION (AUDIO BOARD-DECK B) (See page 17)
To MD/POWER SUPPLY SECTION (AUDIO BOARD-DECK B) (See page 17)
To MD/POWER SUPPLY SECTION (POWER SUPPLY BOARD) (See page 17)
【PANEL BOARD】
IC351 FL DRIVE, LED DRIVE
FL351 FLUORESCENT INDICATOR TUBE
(D304,D305: Included in S905,906)
DOLBY NR
DIRECTION MODE
DUBBING MODE
START
CD SYNCHRO

● IC BLOCK DIAGRAMS

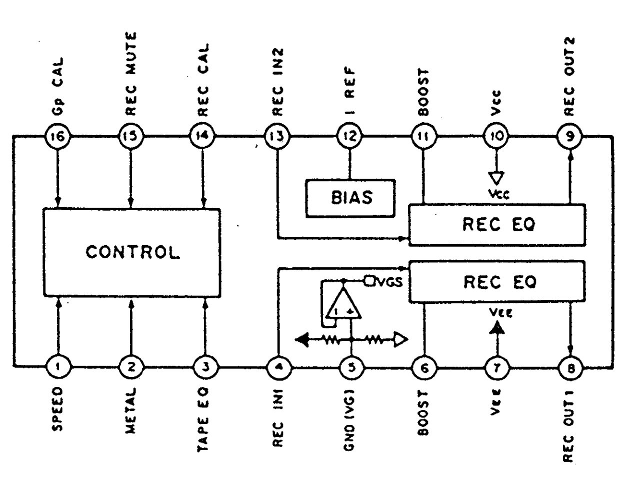
– AEP, UK, Germany, East European Model –

IC101 HD14053BFP



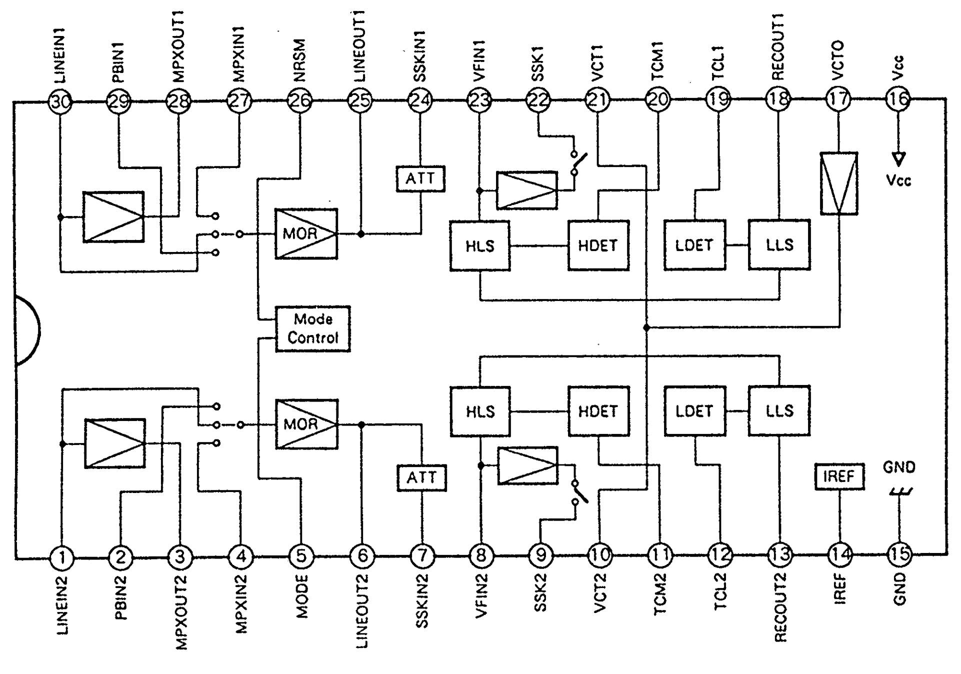
B1
B0
C1
C.COM
C0
INH
VEE
VSS
VDD
B.COM
A.COM
A1
A0
A
B
C
OPEN

IC103 CXA1578M



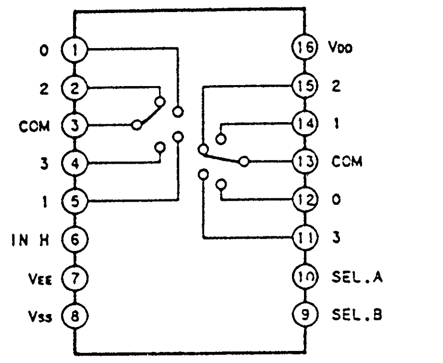
CONTROL
BIAS
REC EQ
REC EQ

IC102 CXA1331M



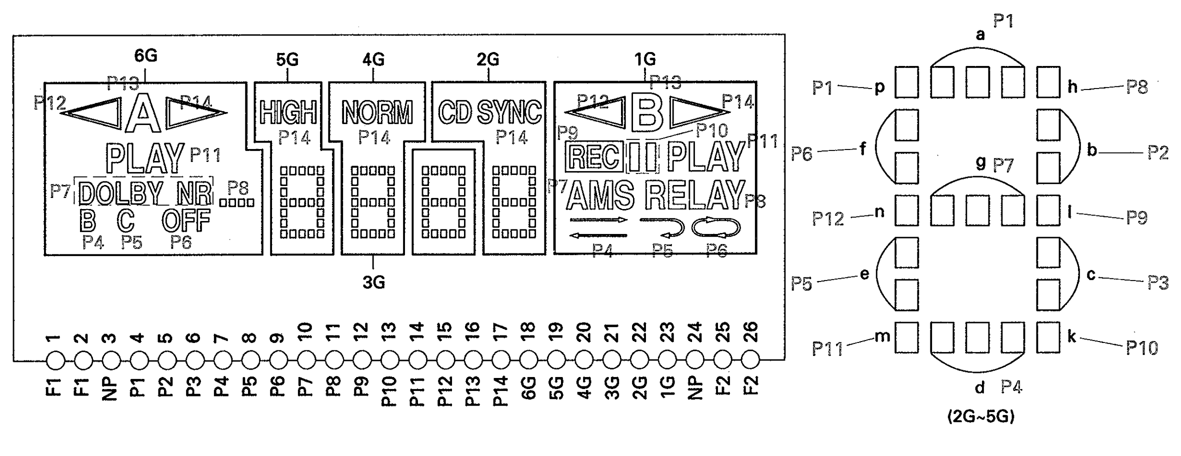
ATT
MOR
Mode Control
HLS
HDET
LDET
LLS
IREF
GND
Vcc

IC605 CD4052BCM



Vdd
COM
SEL.A
SEL.B
INH
Vee
Vss

● FLUORESCENT INDICATOR TUBE (FL351)



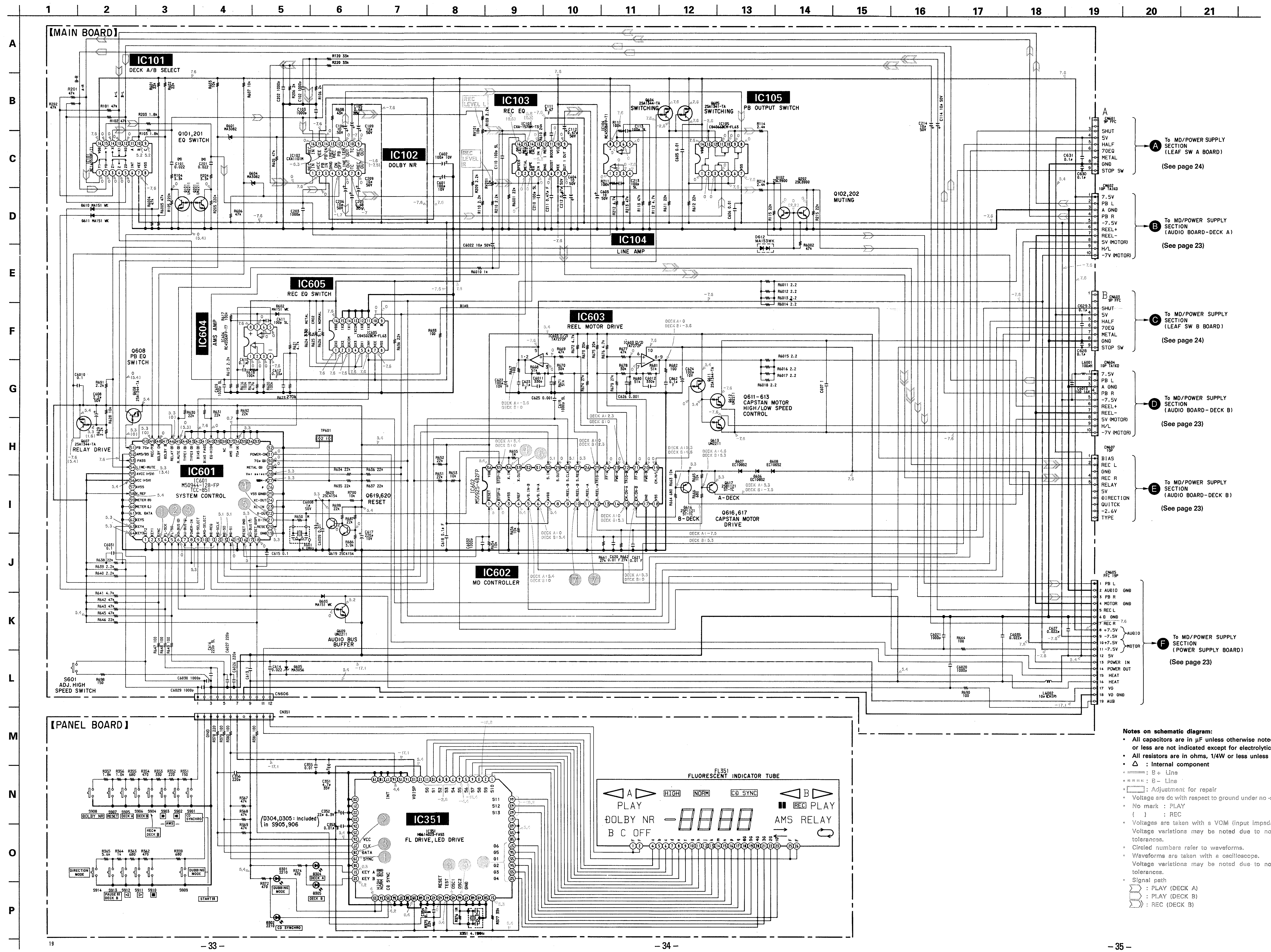
6G
5G
4G
2G
1G
3G
HIGH
NORM
CD SYNC
PLAY
DOLBY NR
B C OFF
REC
PLAY
AMS RELAY
(2G-5G)

Notes on schematic diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : Internal component
- ▬ : B+ Line
- ▪▪▪▪ : B– Line
- ☐ : Adjustment for repair
- Voltage are dc with respect to ground under no -signal conditions.
- No mark : PLAY
  ( ) : REC
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path
  ⟩ : PLAY (DECK A)
  ⟩ : PLAY (DECK B)
  ⟫ : REC (DECK B)

5-10. SCHEMATIC DIAGRAM (MAIN SECTION) – Canadian, Australian, E, Saudi Arabia Model –

• See page 40 for pin functions and 44 for waveforms.



1
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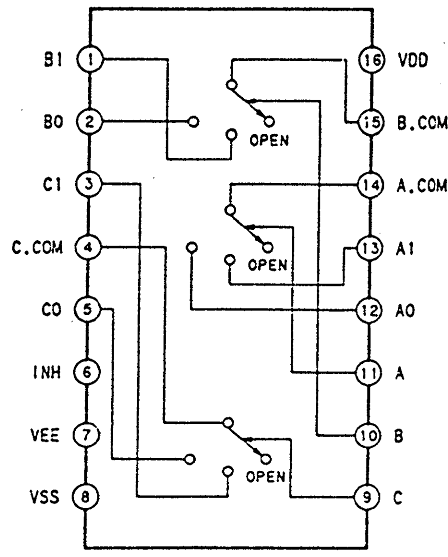
12
13
14
15
16
17
18
19
20
21
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
【MAIN BOARD】
IC101
DECK A/B SELECT
Q101,201
EQ SWITCH
IC102
DOLBY NR
IC103
REC EQ
IC104
LINE AMP
IC105
PB OUTPUT SWITCH
Q102,202
MUTING
IC605
REC EQ SWITCH
IC604
AMS AMP
IC603
REEL MOTOR DRIVE
Q608
PB EQ
SWITCH
RELAY DRIVE
IC601
M50944-128-FP
SYSTEM CONTROL
Q619,620
RESET
IC602
MD CONTROLLER
Q611-613
CAPSTAN MOTOR
HIGH/LOW SPEED
CONTROL
Q616,617
CAPSTAN MOTOR
DRIVE
A-DECK
B-DECK
Q609
AUDIO BUS
BUFFER
S601
ADJ. HIGH
SPEED SWITCH
CN606
CN351
SHUT
5V
HALF
70EQ
METAL
GND
STOP SW
To MD/POWER SUPPLY SECTION (LEAF SW A BOARD)
(See page 24)
7.5V
PB L
A GND
PB R
-7.5V
REEL+
REEL-
5V (MOTOR)
H/L
-7V (MOTOR)
To MD/POWER SUPPLY SECTION (AUDIO BOARD-DECK A)
(See page 23)
To MD/POWER SUPPLY SECTION (LEAF SW B BOARD)
(See page 24)
To MD/POWER SUPPLY SECTION (AUDIO BOARD-DECK B)
(See page 23)
BIAS
REC L
GND
REC R
RELAY
5V
DIRECTION
QUITCK
-2.6V
TYPE
To MD/POWER SUPPLY SECTION (AUDIO BOARD-DECK B)
(See page 23)
PB L
AUDIO GND
PB R
MOTOR GND
REC L
GND
REC R
+7.5V
-7.5V
+7.5V
-7.5V
5V
POWER IN
POWER OUT
HEAT
HEAT
VG
VG GND
AUB
AUDIO
MOTOR
To MD/POWER SUPPLY SECTION (POWER SUPPLY BOARD)
(See page 23)
【PANEL BOARD】
IC351
FL DRIVE, LED DRIVE
FL351
FLUORESCENT INDICATOR TUBE
A
PLAY
HIGH
NORM
CD SYNC
B
REC
PLAY
DOLBY NR
B C OFF
AMS
RELAY
(D304,D305: included in S905,906)
DOLBY NR
DECK A
DECK B
AMS
CD SYNCHRO
REC
DIRECTION MODE
PAUSE
DUBBING MODE
START

Notes on schematic diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : Internal component
- ▬▬▬ : B+ Line
- ▪▪▪▪ : B– Line
- ▭ : Adjustment for repair
- Voltage are dc with respect to ground under no -signal conditions.
- No mark : PLAY
  ( ) : REC
- Voltages are taken with a VOM (input impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path
  ⊳ : PLAY (DECK A)
  ▷ : PLAY (DECK B)
  ⊳⟩ : REC (DECK B)

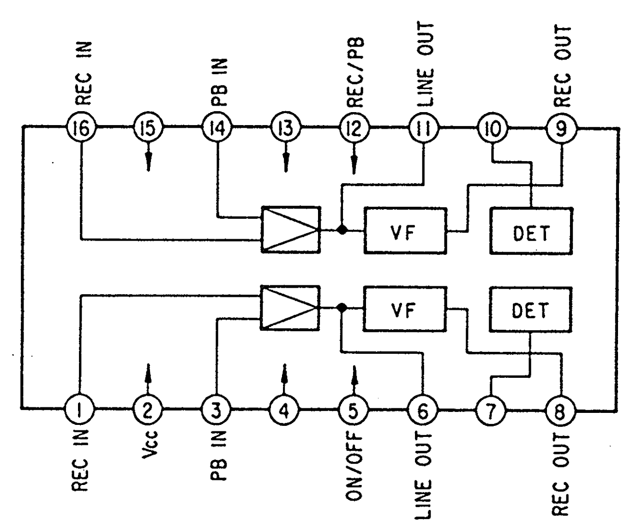
● IC BLOCK DIAGRAMS – Canadian, AEP, UK, Germany Model –

IC101 HD14053BFP



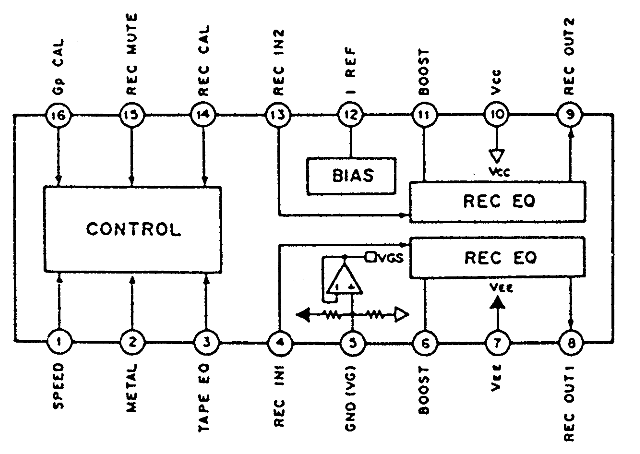
B1
B0
C1
C.COM
CO
INH
VEE
VSS
VDD
B.COM
A.COM
A1
AO
A
B
C
OPEN
OPEN
OPEN

IC102 CXA1101M



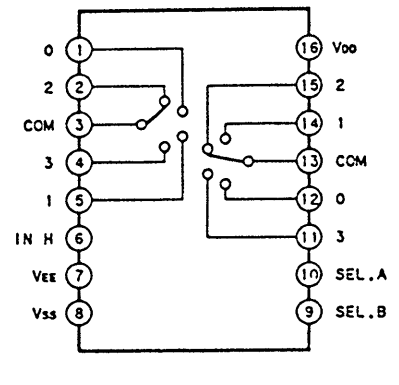
REC IN
PB IN
REC/PB
LINE OUT
REC OUT
VF
DET
VF
DET
REC IN
Vcc
PB IN
ON/OFF
LINE OUT
REC OUT

IC103 CXA1578M



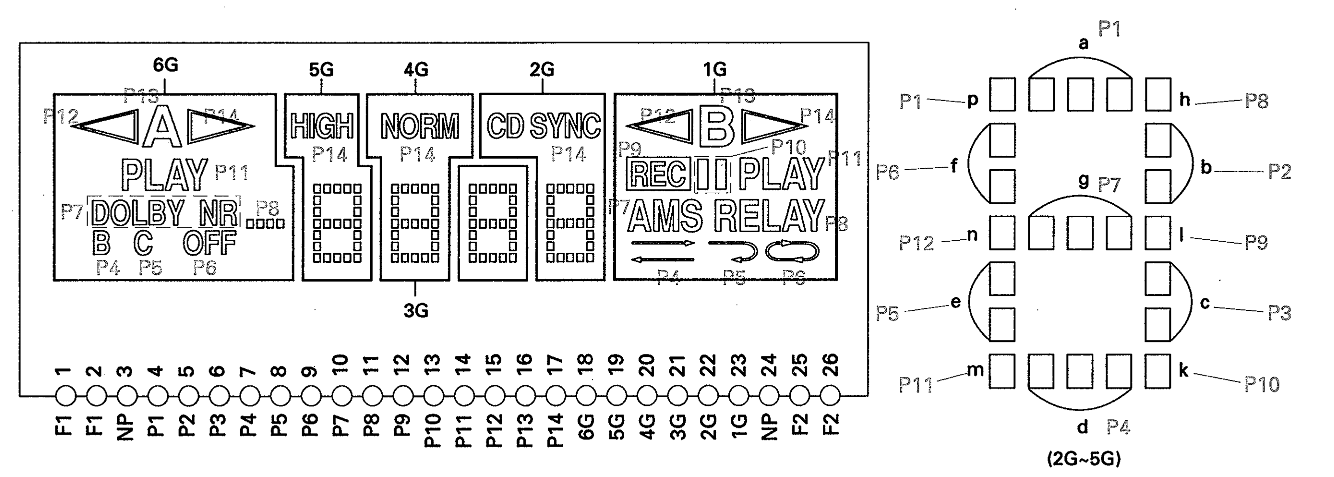
Gp CAL
REC MUTE
REC CAL
REC IN2
I REF
BOOST
Vcc
REC OUT2
BIAS
CONTROL
REC EQ
REC EQ
VGS
Vcc
VEE
SPEED
METAL
TAPE EQ
REC IN1
GND (VG)
BOOST
VEE
REC OUT1

IC605 CD4052BCM



0
2
COM
3
1
IN H
VEE
VSS
VDD
2
1
COM
0
3
SEL.A
SEL.B

● FLUORESCENT INDICATOR TUBE (FL351)



6G
5G
4G
2G
1G
3G
A
PLAY
DOLBY NR
B C OFF
HIGH
NORM
CD SYNC
B
REC
PLAY
AMS RELAY
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
1
2
3
4
5
6
7
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9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
F1
F1
NP
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
6G
5G
4G
3G
2G
1G
NP
F2
F2
a
b
c
d
e
f
g
h
k
l
m
n
p
(2G~5G)

5-11. PRINTED WIRING BOARDS (MAIN SECTION)

– Canadian, Australian, E, Saudi Arabia Model –

• See page 12 for semiconductor lead layouts and 13 for circuit boards location.

● SEMICONDUCTOR LOCATION

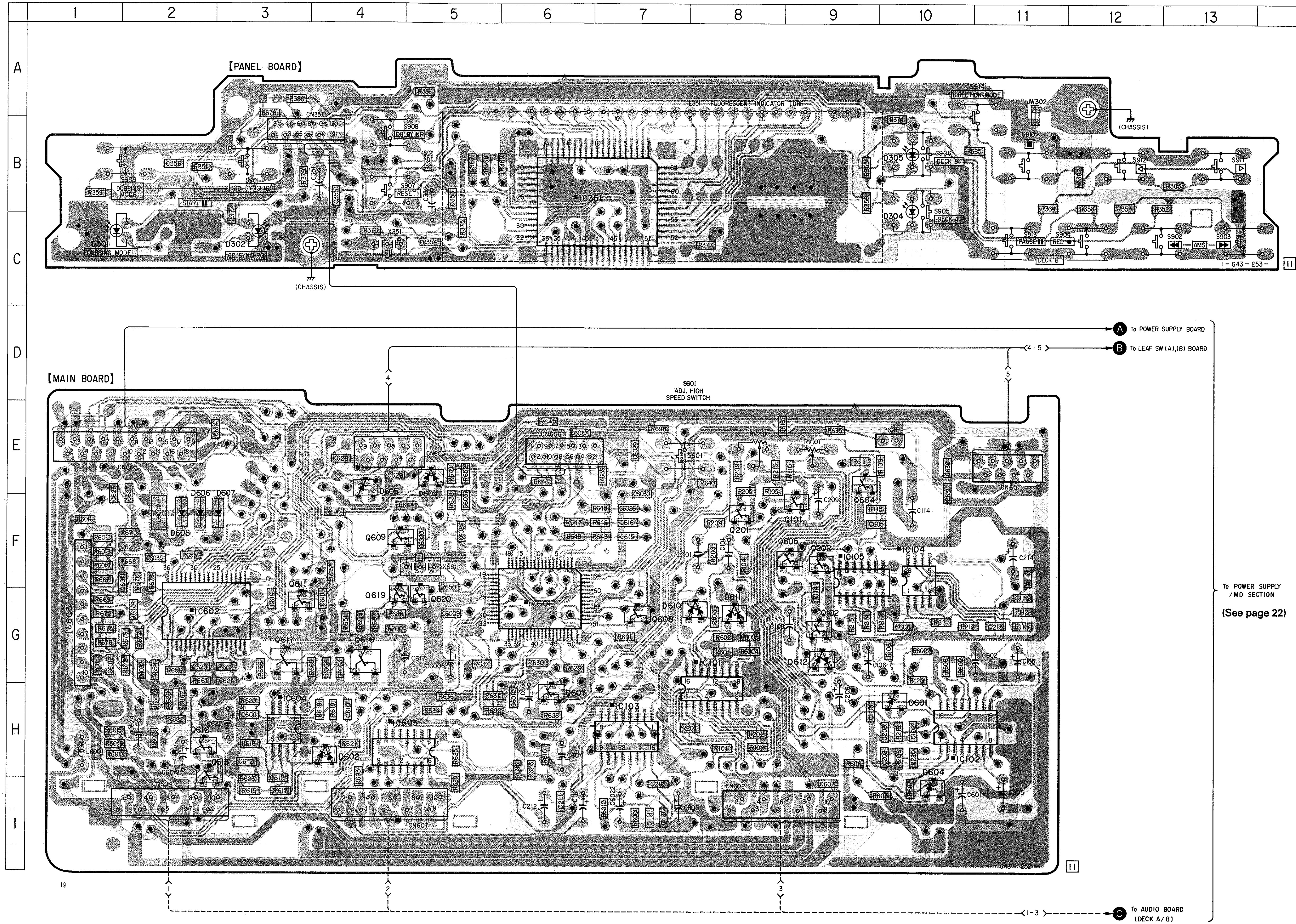
– Canadian, Australian, E, Saudi Arabia Model –

(MAIN SECTION)

Ref. No.	Location
D301	C-1
D302	C-3
D304	C-10
D305	B-10
D601	H-10
D602	H-4
D603	E-5
D604	I-10
D605	E-4
D606	F-2
D607	F-3
D608	F-2
D610	G-8
D611	G-8
D612	G-9
IC101	G-8
IC102	H-10
IC103	H-7
IC104	F-10
IC105	F-9
IC351	B-6
IC601	G-6
IC602	G-2
IC603	G-1
IC604	H-3
IC605	H-4
Q101	F-9
Q102	G-9
Q201	F-8
Q202	F-9
Q604	E-9
Q605	F-9
Q607	H-6
Q608	G-7
Q609	F-4
Q611	G-3
Q612	H-2
Q613	H-2
Q616	G-4
Q617	G-3
Q619	G-4
Q620	G-5

Notes on printed wiring boards:

- •○——: Indicated a lead wire mounted on the component side
- • ■ : Parts mounted on the conductor side
- • ● : Through hole
- • ▨ : Pattern from the side which enables seeing
- • ▨ : Pattern of the rear side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A
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G
H
I
[PANEL BOARD]
FL351 FLUORESCENT INDICATOR TUBE
IC351
CN351
S908 DOLBY NR
S907 RESET
S909 DUBBING MODE
S901 CD SYNCHRO
START
X351
D301 DUBBING MODE
D302 CD SYNCHRO
(CHASSIS)
S914 DIRECTION MODE
JW302
S910
D305
S906 DECK B
S905 DECK A
D304
S912
S911
S913 PAUSE
S904 REC
S902
S903
AMS
DECK B
1-643-253-
11
A To POWER SUPPLY BOARD
B To LEAF SW (A),(B) BOARD
4 · 5
[MAIN BOARD]
S601 ADJ. HIGH SPEED SWITCH
RV201
RV101
TP601
CN606
CN605
CN604
CN601
CN603
CN602
CN607
IC601
IC602
IC603
IC604
IC605
IC101
IC102
IC103
IC104
IC105
D601
D602
D603
D604
D605
D606
D607
D608
D610
D611
D612
Q101
Q102
Q201
Q202
Q604
Q605
Q607
Q608
Q609
Q611
Q612
Q613
Q616
Q617
Q619
Q620
X601
To POWER SUPPLY /MD SECTION
(See page 22)
C To AUDIO BOARD (DECK A/B)
1-3

5-12. PIN FUNCTIONS

IC351 display microprocessor HD614023-FA93

Fluorescent lamp indicator is activated by receiving data from IC601 (system controller).

Pin No.	Pin Name	I/O	Description
1-11	S10-S0	O	FL indicator tube (FL351) segment output
12			Not used. (+5.6 V)
13	VDISP	—	Power supply for activating the FL indicator tube (–20 V)
14, 15			Not used. (GND)
16	SYNC	I	Interrupt input. Data transmission from IC601 (system controller) is checked.
17	INT	I	Not used. (GND)
18-25		I	Not used. (GND)
26	Vcc	—	Power supply terminal (+5.6 V)
27	CLK	I	Data transmission clock input from IC601 (system controller)
28	DATA	I	Serial data input from IC601 (system controller)
29	SYNC	I	Sync signal input which indicates the first byte of data sent from IC601 (system controller)
30			Not used. (GND)
31	KEY A	O	LED (D304) light output in the DECK A.
32	KEY B	O	LED (D305) light output in the DECK B.
33	HIGH DUB	O	LED (D301) light output in the high speed dubbing mode.
34	NORM DUB	O	LED (D301) light output in the normal speed dubbing mode.
35	CD SYNC	O	LED (D302) light output in the CD sync mode.
36-38			Not used. (GND)
39	FLCHECK	I	All the FL indicator tubes are lit when this port is set to "L". (Normally +5.6 V)
40-42			Not used. (GND)
43	RESET	I	Reset input from IC601 (system controller). "L": Reset.
44	TEST	I	Not used. (+5.6 V)
45	OSC1	I	Clock input (4.19 MHz)
46	OSC2	O	Clock output
47	GND	—	Power supply terminal (GND)
48-50			Not used. (GND)
51			Not used. (Pull-up)
52-57	G0-G6	O	FL indicator tube (FL351) grid output
58-61			Not used. (+5.6 V)
62-64	S13-S11	O	FL indicator tube (FL351) segment output

IC601 system controller M50944-128FP

The system is wholly controlled by communication between IC351 (display microprocessor) and IC602 (mechanism controller).

Pin No.	Pin Name	I/O	Description
1	KEY2	I	Not used. (GND)
2	KEY1	I	Not used. (GND)
3	SYNC	O	Sync signal output which indicates the first byte of data sent to IC351 (display microprocessor).
4	FL-SCK	O	Data transmission clock output to IC351 (display microprocessor).
5	FL-SO	O	Serial data output to IC351 (display microprocessor).
6	AU-BUS	O	Audio bus output.
7	AU-BUS	I	Audio bus input (negative edge).
8	POWER-IN	I	Power-off detection input. "L": Power OFF.
9	PB-SELECT	O	Deck A/B switch output in the playback mode. "L": deck B, "H": deck A.
10	AMS-SELECT	O	AMS amplifier input switch output
11	MD-REQ	I	Data request input from IC602 (mechanism controller)
12	MD-SCLK	O	Data transmission clock output to IC602 (mechanism controller)
13	MD-SO	O	Serial data output to IC602 (mechanism controller)
14	MD-SI	I	Serial data input from IC602 (mechanism controller)
15		O	Not used. (GND)
16	RESET (MD)	O	IC602 (mechanism controller) reset signal output.
17	AU-BUS	I	Audio bus input (positive-edge)
18	RESET (DSP)	O	IC351 (display microprocessor) reset signal output.
19	GND	—	Power supply terminal. (GND)
20	RESET	I	System reset input. "L": Reset.
21	X-IN	I	Clock input (4 MHz)
22	X-OUT	O	Clock output
23	XC-IN	I	Not used. (GND)
24	XC-OUT	O	Not used. (open)
25	VSS	—	Power supply terminal (GND)
26	N. C.		Not used. (open)
27	TEST	I	Electrical adjustment test mode setting input. This set enters into the test mode when the power is on and it is set to "L". *1
28	VAR SELECT	I	Not used. (pull-up)
29	METAL (B)	I	Metal switch (S83) input for deck B. "H": Metal.
30	70 µ (B)	I	Chrome switch (S82) input for deck B. "L": Normal.
31	POWER-ON	O	Power on output terminal. "L": Power ON.
32-35			Note used. (GND)
36	70 µ (A)	I	Chrome switch (S82) input for deck A. "L": Normal.
37	AMS IN	I	Signal input from the AMS amplifier. "H": Detected, "L": Not detected.
38	N. C.		Not used. (GND)
39			Not used. (GND)
40	EQ-HIGH	O	REC equalizer characteristic switch output "H": High speed, "L": Normal speed.
41	BIAS FADE	O	Not used. (GND)
42	BIAS (B)	O	Bias ON/OFF switch output. "H": OFF, "L": ON.
43	TYPE II (B)	O	Not used. (GND)
44	TYPE I (B)	O	Not used. (GND)
45	R. MUTE (B)	O	REC mute control output. "L": Mute ON, "H": Mute OFF.
46	RELAY (B)	O	Mechanism deck head switch control output. "L": ON.
47	DOLBY B	O	Dolby B/C switch control output. "L": Dolby C, "H": Dolby B.
48	DOLBY ON	O	Dolby ON/OFF switch control output. "L": ON, "H": OFF.

Pin No.	Pin Name	I/O	Description
49	REC/PB	O	Dolby amplifier REC/PB switch output. "L": REC, "H": PB.
50		O	Not used. (open)
51	PB 70 µ	O	Playback equalizer characteristic switch output. "H": Normal, "L": Chrome or metal.
52	AMS/BS	O	Not used.
53	PASS	O	PASS amplifier switch output for LINE OUT. "L": PASS amplifier, "H": Through.
54	LINE-MUTE	O	Line mute control output. "L": MUTE OFF, "H": MUTE ON.
55	AVCC	—	Power supply terminal. (+5 V)
56	VCC	—	Power supply terminal. (+5 V)
57	AVSS	—	Power supply terminal. (GND)
58	V. REF	I	Reference voltage input for A/D input port (+5 V)
59	METER (R)	I	Level meter signal input (R-CH). Not used on this set.
60	METER (L)	I	Level meter signal input (L-CH). Not used on this set.
61	VOL DATA	I	Not used. (GND)
62	KEY5	I	Not used. (GND)
63	KEY4	I	Key input. (analog) *2
64	KEY3	I	Key input. (analog) *2

*1 Test mode
When the power is on and pin ㉗ is set to "L" (TP601 is shortened.), the set enters the electrical adjustment test mode and the followings can be available.

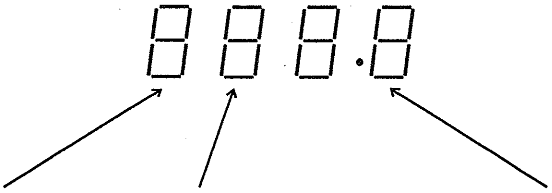
(1) High speed playback
When the S601 (in the main board) is turned ON in playback mode, high-speed playback mode is actuated.

(2) Source monitor
Recording signals can be monitored through the OUTPUT terminal (see page 4) because the line short is removed in recording.

(3) Recording memory
Recording memory is set to ON when the tape counter is reset at the record start point.

(4) Mode display
The counter displays as shown below when the counter mode is set to the deck A and the deck A button of deck A/B switch is pressed, or when the counter mode is the B deck and the B deck button is pressed.

(5) When this terminal is set back to "H" after it is set to the test mode in "L" of the power-on mode, all the FL indicator tubes are lit. (The mechanism block continues to operate as before it is set to "H".)



Key input (Pin (64), KEY3)
"0": DUBBING MODE (S909)
"3": ■ (S910)
"4": ▷ (S911)
"5": ◁ (S912)
"6": ❚❚ (S913)
"8": DIRECTION MODE (S914)

Key input (Pin (63), KEY4)
"0": CD SYNCHRO (S901)
"1": ◀◀ (S902)
"2": ▶▶ (S903)
"3": ● REC (S904)
"4": KEY COUNTER B (S906)
"5": KEY COUNTER A (S905)
"6": COUNTER RESET (S907)
"7": DOLBY NR (S908)

AMS signal
"1": Component is detected.
"0": Component is not detected.

*2 Key input (analog port)

Voltage (V) / Input port	0	0.3	0.7	1.2	1.7	2.3	2.8	4.0
Pin (63), KEY4	CD SYNCHRO	◀◀	▶▶	● REC	KEY COUNTER B	KEY COUNTER A	COUNTER RESET	DOLBY NR
Pin (64), KEY3	DUBBING MODE			■	▷	◁	❚❚ PAUSE	DIRECTION MODE

IC602 mechanism controller M50925-482FP

The mechanism deck is controlled by receiving data from IC601 (system controller).

Pin No.	Pin Name	I/O	Description
1	RESET	I	Reset input from IC601 (system controller). "L": Reset.
2	STOP-A	I	Deck A stop switch (S81) input. "H": Stop.
3	AVSS	—	Power supply terminal (GND)
4	Vref	I	A/D input port reference voltage input.
5	A/D. IN-B	I	Deck B leaf switch input (analog). *1
6	A/D. IN-A	I	Deck A leaf switch input (analog). *1
7	AVDD	—	Power supply terminal. (+5 V)
8	N. C.		
9	T. REEL-B	I	Not used. (GND)
10	S. REEL-B	I	Deck B supply reel table sensor (IC81)
11	T. REEL-A	I	Not used. (GND)
12	S. REEL-A	I	Deck A supply reel table sensor (IC81)
13, 14	N. C.		
15	CM. ON-A	O	Deck A capstan motor (M901A) ON/OFF control output. "L": OFF, "H": ON.
16	CM. ON-B	O	Deck B capstan motor (M901B) ON/OFF control output. "L": OFF, "H": ON.
17	GND	—	Power supply terminal. (GND)
18	VSS	—	Power supply terminal. (GND)
19	CM. H/L	O	Capstan motor (M901A, M901B) speed control switch output. "H": High speed, "L": Normal speed.
20	FWD-B	O	Deck B reel motor (M902B) control output. *2 The reel motor is activated by combining these three outputs.
21	FF-B	O	
22	TRIG-B	O	
23	FWD-A	O	Deck A reel motor (M902A) control output. *2 The reel motor is activated by combining these three outputs.
24	FF-A	O	
25	TRIG-A	O	
26	N. C.		
27	S. REQ	O	Data request output to IC601 (system controller).
28	S. CLK	I	Data transmission clock input from IC601 (system controller).
29	S. OUT	O	Serial data output to IC601 (system controller).
30	S. IN	I	Serial data input from IC601 (system controller).
31, 32	N. C.		
33	XOUT	O	Clock output.
34	XIN	I	Clock input. (4 MHz)
35	STOP-B	I	Deck B stop switch (S81) input. "H": Stop.
36	VDD	—	Power supply terminal. (+5 V)

*1 HALF, REC safety tab leaf switch input

Leaf switch \ Voltage	1	1.9	2.8	3.9	5
Half S86	ON				OFF
REC safety tab, side A S84	OFF	ON	OFF	ON	OFF
REC safety tab, side B S85	ON	ON	OFF	OFF	OFF
	↑ REC available for only side B.	↑ REC available for both sides A.	↑ REC inhibit for both sides A and B.	↑ REC available for only side A.	↑ Tape is not set.

Tape is set.

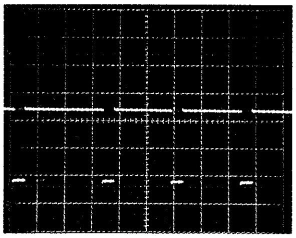
*2 Reel motor drive

Output port \ Mode	FF	TRIG (kick)	STOP	FWD
Pin ㉑ and ㉔ FF	L	H	L	L
Pin ㉒ and ㉕ TRIG	H	L	L	H
Pin ⑳ and ㉓ FWD	H	H	L	L

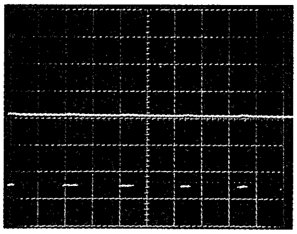
Reel motor drive amplifier output voltage

Output	Voltage
TRIG	+6 V
FF.REW	−5 V
FWD	−3 V

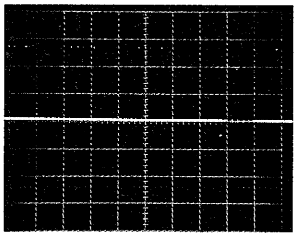
5-13. WAVEFORMS



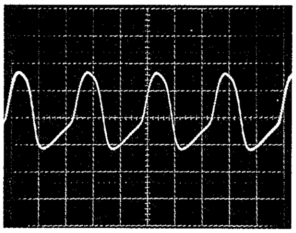
❶ IC601 ③pin (SYNC),
IC351 ㉙pin (SYNC)
5.2Vp-p, 2.5msec



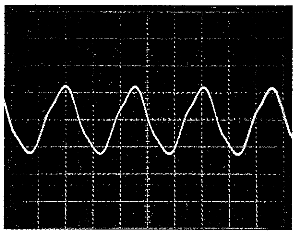
❷ IC601 ④pin (FL-SCK),
IC351 ㉗pin (CLK)
5.2Vp-p, 2.2msec



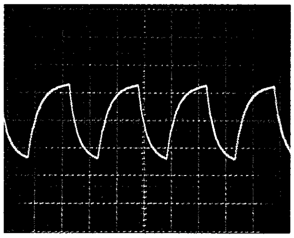
❸ IC601 ⑤pin (FL-SO),
IC351 ㉘pin (DATA)
5.4Vp-p, 26msec



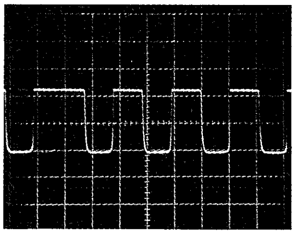
❹ IC601 ㉒pin (X OUT),
IC602 ㉞pin (X IN)
5.6Vp-p, 0.25μsec



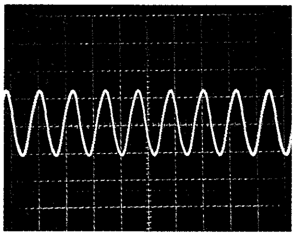
❺ IC601 ㉑pin (X IN)
5.2Vp-p, 0.25μsec



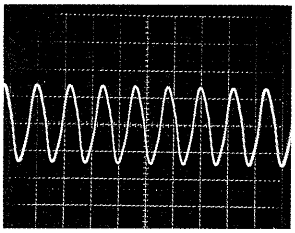
❻ IC602 ㉝pin (X OUT)
5.2Vp-p, 0.25μsec



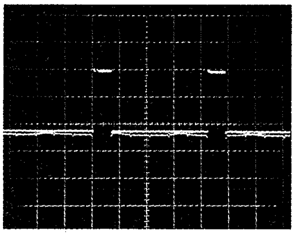
❼ IC602 ⑩,⑫ pin
(S-REEL-A/B)
FF/REW MODE
4.8Vp-p, 19msec



❽ IC351 ㊺pin (OSC1)
4.8Vp-p, 0.24μsec



❾ IC351 ㊻pin (OSC2)
5.8Vp-p, 0.24μsec



❿ IC351 (52)-(57)pin
(G4-1, 5, 6)
24Vp-p, 8.4msec

SECTION 6
EXPLODED VIEWS

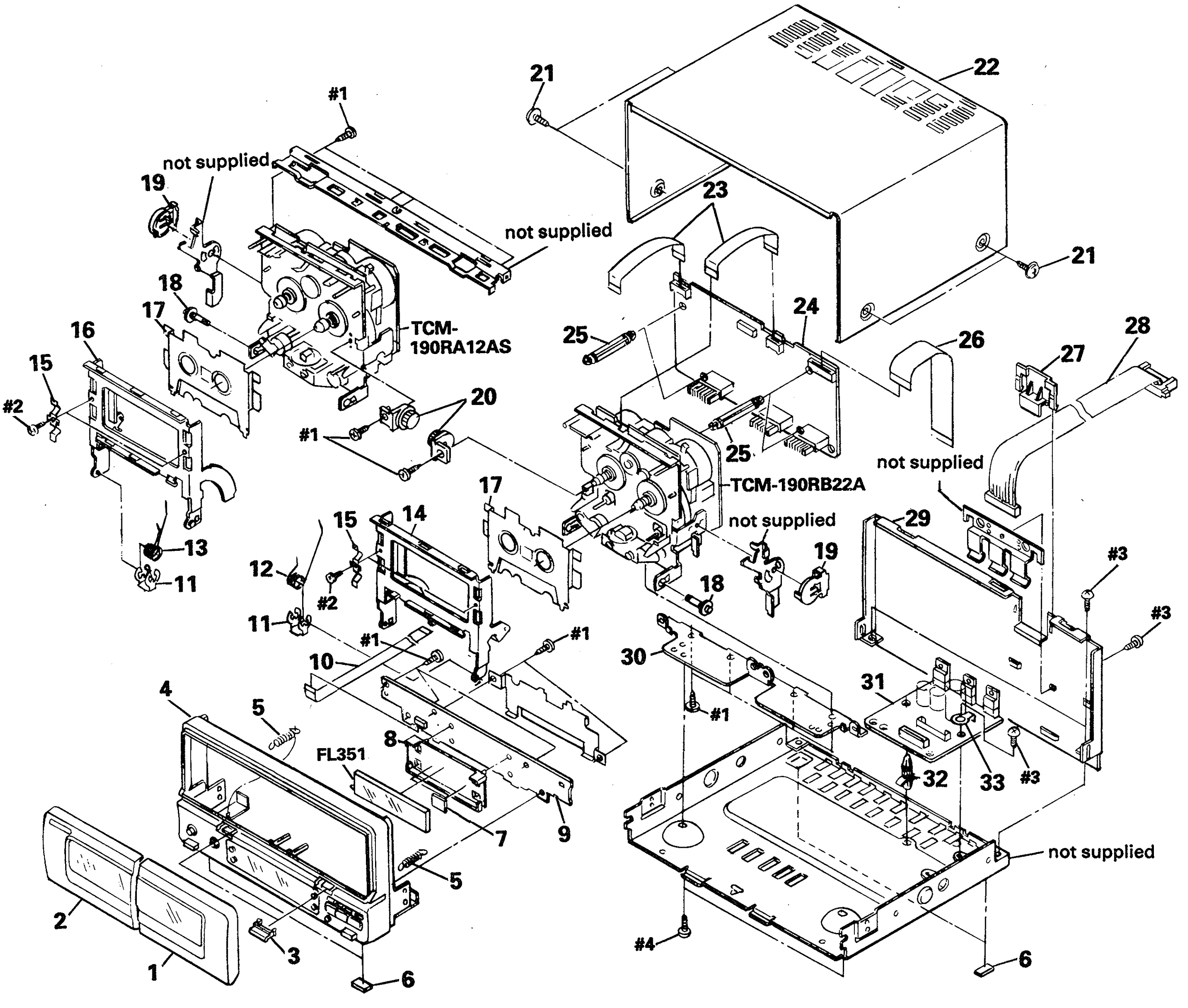
NOTE:

- –XX, –X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB,BALANCE(WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware(# mark) list is given in the last of this parts list.
- G : Germany Model
- AUS : Australian Model
- EA : Saudi Arabia Model
- EE : East European Model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CHASSIS SECTION

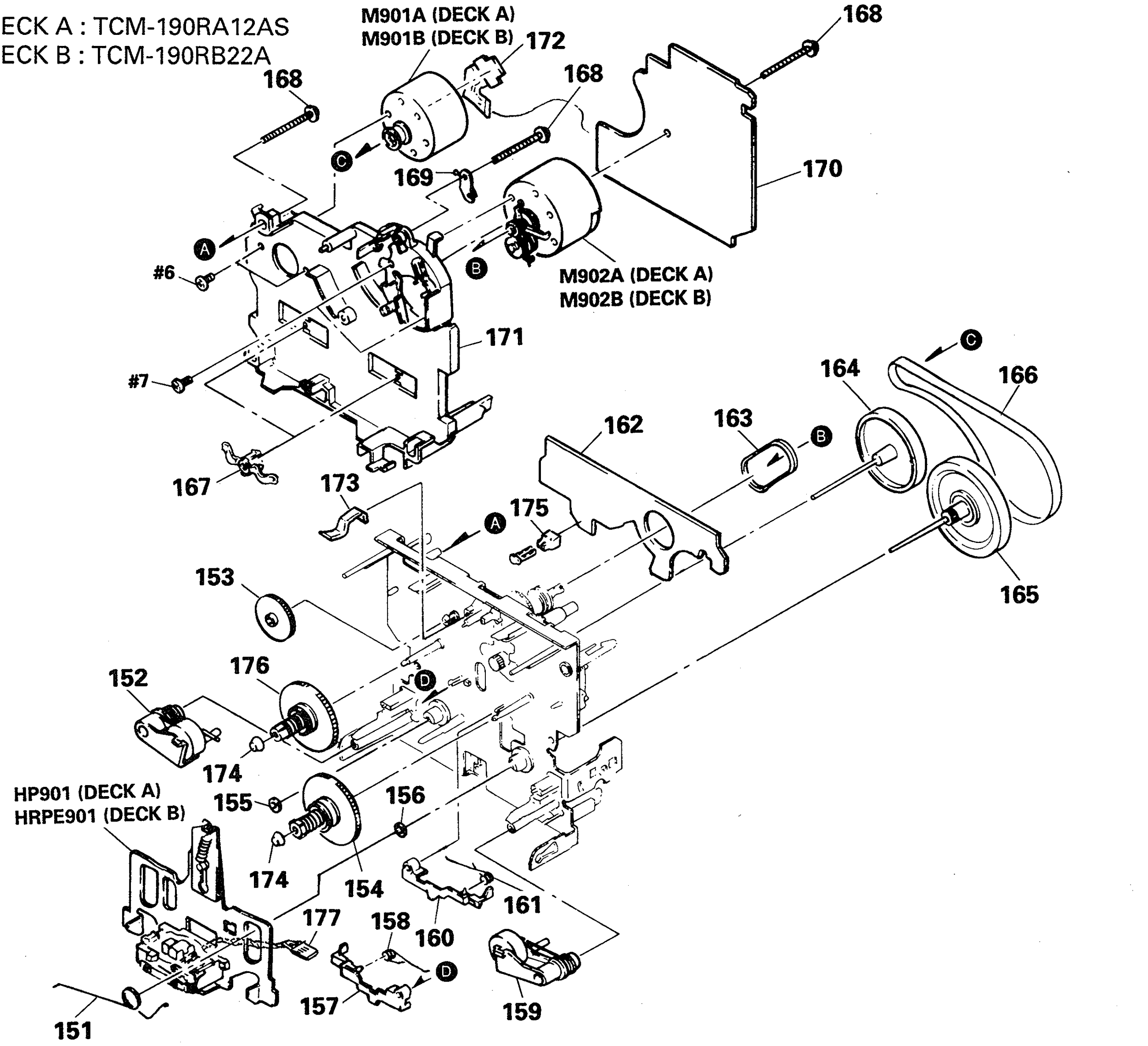


21
22
#1
not supplied
19
23
not supplied
21
18
17
24
16
TCM-190RA12AS
25
28
15
26
27
#2
20
#1
25
not supplied
17
TCM-190RB22A
15
14
not supplied
29
13
19
12
#3
11
#2
18
11
#1
#3
#1
10
30
4
31
5
#1
8
FL351
32
33
#3
7
9
not supplied
5
2
3
#4
6
1
6

Ref. No.	Part No.	Description	Remarks
1	X-3364-805-1	LID(B) ASSY, CASSETTE(Canadian, AUS, E, EA)	
1	X-3364-807-1	LID(B) ASSY, CASSETTE(AEP, UK, G, EE)	
2	X-3364-804-1	LID(A) ASSY, CASSETTE	
3	3-377-868-01	COVER (AZIMUTH)	
4	X-3364-803-1	PANEL ASSY, FRONT	
5	3-489-099-11	SPRING, TENSION	
6	4-930-336-11	FOOT (FELT)	
* 7	4-932-810-11	CUSHION (FL)	
* 8	3-367-839-01	HOLDER, FL TUBE	
* 9	A-2006-712-A	PANEL BOARD, COMPLETE(Canadian, AUS, E, EA)	
* 9	A-2006-715-A	PANEL BOARD, COMPLETE (AEP, G, EE)	
* 9	A-2006-792-A	PANEL BOARD, COMPLETE (UK)	
10	1-690-892-11	WIRE (FLAT TYPE) (12 CORE)	
11	3-367-720-01	RING (W), RETAINING	
12	3-354-960-01	SPRING (LOADING R), TORSION	
13	3-354-959-01	SPRING (LOADING L), TORSION	
14	X-3362-856-1	HOLDER (R) ASSY, CASSETTE	
15	3-340-137-01	SPRING, CASSETTE RETAINER	
16	X-3362-857-1	HOLDER (L) ASSY, CASSETTE	
17	3-367-711-01	RETAINER, CASSETTE	
18	3-367-721-01	SHAFT (FULCRUM SHAFT)	
19	3-354-957-01	JOINT (LOCK LEVER)	
20	3-354-963-01	DAMPER	
21	3-704-366-01	SCREW (CASE) (M3X8)	
* 22	4-951-094-11	CASE	
23	1-590-902-11	WIRE, FLAT TYPE (9 CORE)	
* 24	A-2006-711-A	MAIN BOARD, COMPLETE(Canadian, AUS, E, EA)	
* 24	A-2006-714-A	MAIN BOARD, COMPLETE(AEP, G, EE)	
* 24	A-2006-791-A	MAIN BOARD, COMPLETE(UK)	
* 25	3-682-419-21	HOLDER, P.C.B	
26	1-690-893-11	WIRE (FLAT TYPE) (19 CORE)	
* 27	3-377-869-01	CLAMP (CONNECTOR)	
28	1-690-878-11	CORD (WITH CONNECTOR)	
* 29	3-376-858-11	PANEL, BACK	
* 30	3-367-724-01	JOINT (LOWER)	
* 31	A-2006-713-A	POWER BOARD, COMPLETE(Canadian, AUS, E, EA)	
* 31	A-2006-716-A	POWER BOARD, COMPLETE(AEP, G, EE)	
* 31	A-2006-793-A	POWER BOARD, COMPLETE(UK)	
* 32	3-346-265-11	HOLDER, PC BOARD	
* 33	4-942-204-01	PLATE, GROUND	
FL351	1-519-708-11	INDICATOR, TUBE FLUORESCENT	

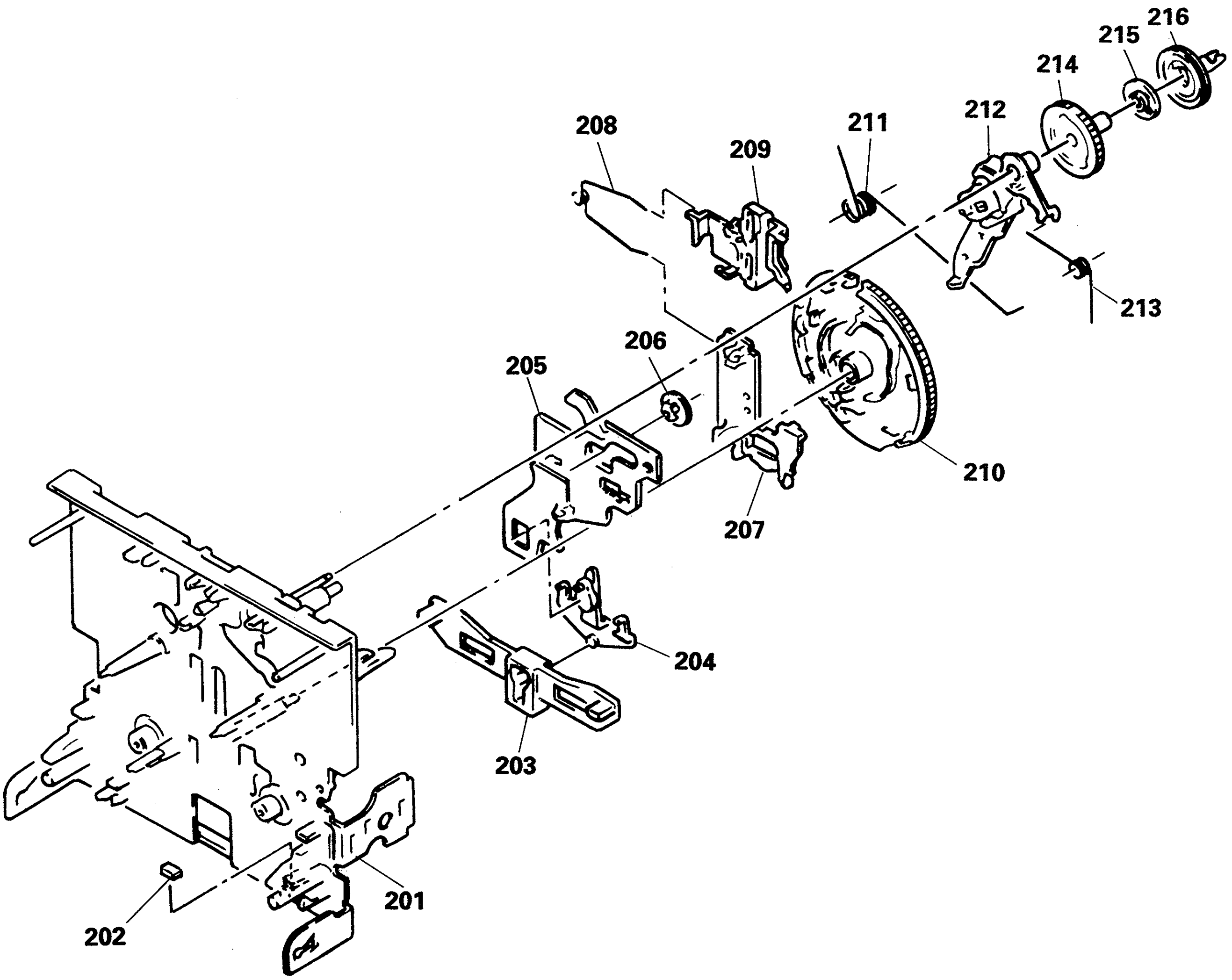
6-2. MECHANISM SECTION 1

DECK A : TCM-190RA12AS
DECK B : TCM-190RB22A


M901A (DECK A)
M901B (DECK B)
172
168
168
168
169
170
A
B
C
#6
M902A (DECK A)
M902B (DECK B)
171
#7
C
164
166
162
163
B
167
173
175
A
153
165
152
176
D
174
HP901 (DECK A)
HRPE901 (DECK B)
155
156
174
154
161
177
158
160
D
157
159
151

Ref. No.	Part No.	Description	Remarks
151	3-359-455-01	SPRING, TORSION	
152	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY	
153	3-359-424-01	GEAR (REV GEAR)	
154	X-3359-404-1	TABLE ASSY, REEL	
155	3-356-714-01	WASHER	
156	3-356-713-01	WASHER	
157	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
158	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
159	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY	
160	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
161	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
* 162	1-634-841-14	LEAF SW (A) BOARD (DECK A)	
* 162	1-634-841-14	LEAF SW (B) BOARD (DECK B)	
163	3-359-466-01	BELT (FR), SQUARE	
164	X-3359-410-1	FLYWHEEL (REV) ASSY	
165	X-3364-554-1	FLYWHEEL (FWD) ASSY	
166	3-359-417-01	BELT (FLAT), CAPSTAN	
167	3-575-321-00	RETAINER, THRUST, CAPSTAN	
168	3-359-414-01	SCREW (+PTPWH 2X23)	
169	3-359-450-01	PLATE, GROUND	
* 170	A-2006-399-A	AUDIO BOARD(RA12A), COMPLETE (DECK A)	
* 170	A-2006-400-A	AUDIO BOARD(RB22A), COMPLETE (DECK B)	
* 171	3-359-436-01	BASE (THRUST RETAINER),FITTING	
172	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
173	3-359-430-01	SPRING(CASSETTE RETAINER),LEAF	
174	3-362-308-01	CAP (REEL)	
175	3-343-419-01	HOLDER (S SENSOR A)	
176	X-3362-078-1	TABLE ASSY (B), REEL	
* 177	1-690-419-11	WIRE,LEAD(WITH CONNECTOR)4CORE	
HP901	A-2003-958-B	BASE ASSY, HEAD (DECK A)	
HRPE901	A-2003-838-A	BASE ASSY, HEAD (DECK B)	
M901A	X-3359-417-1	CAPSTAN MOTOR ASSY (DECK A)	
M901B	X-3359-417-1	CAPSTAN MOTOR ASSY (DECK B)	
M902A	X-3363-501-1	REEL MOTOR ASSY (DECK A)	
M902B	X-3363-501-1	REEL MOTOR ASSY (DECK B)	

6-3. MECHANISM SECTION 2



Ref. No.	Part No.	Description	Remarks
201	X-3363-790-1	CHASSIS ASSY, MECHANICAL	
202	3-359-469-01	SPACER	
* 203	3-359-425-01	SLIDER (REVERSE SLIDER)	
204	3-359-426-01	LEVER (REVERSE LEVER)	
* 205	3-359-415-01	SLIDER (TRIGGER SLIDER)	
206	3-359-448-01	GEAR (TRIGGER)	
* 207	3-359-427-01	SLIDER (LEVERSE SLIDER)	
208	3-359-454-01	SPRING, TORSION	
209	3-359-429-01	SLIDER (BRAKE PLATE)	
210	3-359-420-01	GEAR (CAM GEAR)	
211	3-359-456-01	SPRING(TRIGGER SPRING),TORSION	
212	X-3359-405-1	LEVER (FR ARM) ASSY	
213	3-359-453-01	SPRING (FR ARM), TORSION	
214	3-359-419-01	GEAR (FR GEAR)	
215	3-359-421-01	CLUTCH (REEL DISK)	
216	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- G : Germany Model
- AUS : Australian Model
- EA : Saudi Arabia Model
- EE : East European Model

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

LEAF SW(A) **LEAF SW(B)** **AUDIO(RA12A)**

Ref. No.	Part No.	Description	Remarks
*	1-634-841-14	LEAF SW(A) BOARD (DECK A)	
		*************************	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81	8-719-710-03	DIODE NJL5165K-B	
		< RESISTOR >	
R84	1-249-417-11	CARBON 1K 5% 1/4W	
R85	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)	
S82	1-571-281-21	SWITCH, LEAF (70EQ)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	
**			
*	1-634-841-14	LEAF SW(B) BOARD (DECK B)	
		*************************	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81	8-719-710-03	DIODE NJL5165K-B	
		< RESISTOR >	
R81	1-249-414-11	CARBON 560 5% 1/4W	
R82	1-247-818-11	CARBON 300 5% 1/4W	
R83	1-247-834-11	CARBON 1.3K 5% 1/4W	
R84	1-249-417-11	CARBON 1K 5% 1/4W	
R85	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)	
S82	1-571-281-21	SWITCH, LEAF (70EQ)	
S83	1-571-281-21	SWITCH, LEAF (METAL)	
S84	1-571-281-21	SWITCH, LEAF (REC A)	
S85	1-571-281-21	SWITCH, LEAF (REC B)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	
**			
*	A-2006-399-A	AUDIO BOARD(RA12A), COMPLETE (DECK A)	
		*************************************	
		< CAPACITOR >	
C11	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	
C12	1-136-157-00	FILM 0.022uF 5% 50V	
C13	1-124-234-00	ELECT 22uF 20% 16V	
C18	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C21	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	
C22	1-136-157-00	FILM 0.022uF 5% 50V	
C23	1-124-234-00	ELECT 22uF 20% 16V	
C28	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C31	1-124-234-00	ELECT 22uF 20% 16V	
C32	1-124-234-00	ELECT 22uF 20% 16V	
C72	1-124-499-11	ELECT, NONPOLAR 1uF 20% 50V	
		< CONNECTOR >	
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD	
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P	
* CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P	
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	
		< IC >	
IC31	8-759-106-02	IC uPC4570G2	
		< JUMPER WIRE >	
JW1	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW51	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW52	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW53	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW54	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< TRANSISTOR >	
Q71	8-729-602-36	TRANSISTOR 2SA1602-F	

AUDIO(RA12A) AUDIO(RB22A)

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R11	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R12	1-216-025-00	METAL CHIP 100 5% 1/10W	
R13	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
R14	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R21	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R22	1-216-025-00	METAL CHIP 100 5% 1/10W	
R23	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
R24	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R31	1-216-033-00	METAL CHIP 220 5% 1/10W	
R32	1-216-033-00	METAL CHIP 220 5% 1/10W	
R71	1-216-082-00	METAL GLAZE 24K 5% 1/10W	
R72	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R73	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R74	1-216-089-00	METAL CHIP 47K 5% 1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remarks
RV11	1-238-012-11	RES, ADJ, CARBON 1K (PB LEVEL L)	
RV21	1-238-012-11	RES, ADJ, CARBON 1K (PB LEVEL R)	
RV71	1-238-016-11	RES, ADJ, CARBON 10K (NORMAL SPEED)	
RV72	1-238-016-11	RES, ADJ, CARBON 10K (HIGH SPEED)	

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* A-2006-400-A AUDIO BOARD(RB22A), COMPLETE (DECK B)

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< CAPACITOR >

Ref. No.	Part No.	Description	Remarks
C11	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	
C12	1-136-157-00	FILM 0.022uF 5% 50V	
C13	1-124-234-00	ELECT 22uF 20% 16V	
C14	1-136-273-91	FILM 75PF 5% 630V	
C15	1-164-080-11	CERAMIC 390PF 10% 50V	
C17	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C18	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C21	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	
C22	1-136-157-00	FILM 0.022uF 5% 50V	
C23	1-124-234-00	ELECT 22uF 20% 16V	
C24	1-136-273-91	FILM 75PF 5% 630V	
C25	1-164-080-11	CERAMIC 390PF 10% 50V	
C27	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C28	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C31	1-124-234-00	ELECT 22uF 20% 16V	
C32	1-124-234-00	ELECT 22uF 20% 16V	
C33	1-124-234-00	ELECT 22uF 20% 16V	
C51	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C52	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C53	1-163-022-00	CERAMIC CHIP 0.012uF 10% 50V	
C54	1-136-559-11	FILM 0.0047uF 5% 630V	
C56	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
C57	1-164-346-11	CERAMIC CHIP 1uF 16V	
C58	1-163-024-00	CERAMIC CHIP 0.018uF 10% 50V	
C72	1-124-499-11	ELECT, NONPOLAR 1uF 20% 50V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD	
* CNJ33	1-580-782-11	CONNECTOR, BOARD TO BOARD	
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P	
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P	
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	

< DIODE >

Ref. No.	Part No.	Description	Remarks
D31	8-719-988-62	DIODE 1SS355	

< IC >

Ref. No.	Part No.	Description	Remarks
IC31	8-759-106-02	IC uPC4570G2	

< JUMPER WIRE >

Ref. No.	Part No.	Description	Remarks
JW1	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW2	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW3	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW4	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW5	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW6	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW7	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW52	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW53	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW54	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW55	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW56	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW57	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW58	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW59	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW60	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW61	1-216-296-00	METAL CHIP 0 5% 1/8W	

< COIL >

Ref. No.	Part No.	Description	Remarks
L11	1-410-780-11	INDUCTOR 27mH	
L21	1-410-780-11	INDUCTOR 27mH	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remarks
Q51	8-729-808-01	TRANSISTOR 2SD1622-S	
Q52	8-729-808-01	TRANSISTOR 2SD1622-S	
Q53	8-729-808-01	TRANSISTOR 2SD1622-S	
Q71	8-729-602-36	TRANSISTOR 2SA1602-F	

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R11	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R12	1-216-025-00	METAL CHIP 100 5% 1/10W	
R13	1-216-100-00	METAL GLAZE 130K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remarks
R14	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R15	1-249-430-11	CARBON	12K	5%	1/4W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
R22	1-216-025-00	METAL CHIP	100	5%	1/10W
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R25	1-249-430-11	CARBON	12K	5%	1/4W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R41	1-249-393-11	CARBON	10	5%	1/4W
R42	1-249-393-11	CARBON	10	5%	1/4W
R51	1-216-075-00	METAL CHIP	12K	5%	1/10W
R52	1-216-075-00	METAL CHIP	12K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R56	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-00	METAL CHIP	47K	5%	1/10W
R74	1-216-089-00	METAL CHIP	47K	5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description		Remarks
RV11	1-238-012-11	RES, ADJ, CARBON	1K	(PB LEVEL L)
RV12	1-238-551-11	RES, ADJ, CARBON	220K	(REC BIAS L)
RV21	1-238-012-11	RES, ADJ, CARBON	1K	(PB LEVEL R)
RV22	1-238-551-11	RES, ADJ, CARBON	220K	(REC BIAS R)
RV71	1-238-016-11	RES, ADJ, CARBON	10K	(NORMAL SPEED)
RV72	1-238-016-11	RES, ADJ, CARBON	10K	(HIGH SPEED)

< RELAY >

Ref. No.	Part No.	Description
RY31	1-515-726-11	RELAY

< TRANSFORMER >

Ref. No.	Part No.	Description
T51	1-406-419-11	COIL, BIAS OSCILLATION

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Ref. No.	Part No.	Description
*	A-2006-711-A	MAIN BOARD, COMPLETE (Canadian, AUS, E, EA)
*	A-2006-714-A	MAIN BOARD, COMPLETE (AEP, G, EE)
*	A-2006-791-A	MAIN BOARD, COMPLETE (UK)

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< CAPACITOR >

Ref. No.	Part No.	Description			Remarks
C101	1-136-157-00	FILM	0.022uF	5%	50V
C102	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V (AEP, UK, G, EE)
C102	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V (Canadian, AUS, E, EA)
C103	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C104	1-130-475-00	MYLAR	0.0022uF	5%	50V (AEP, UK, G, EE)
C105	1-130-475-00	MYLAR	0.0022uF	5%	50V (AEP, UK, G, EE)
C105	1-131-587-11	TANTALUM	0.68uF	5%	35V (Canadian, AUS, E, EA)
C106	1-126-059-11	ELECT	10uF	20%	50V
C107	1-136-174-00	FILM	0.56uF	5%	50V (AEP, UK, G, EE)
C108	1-136-171-00	FILM	0.33uF	5%	50V (AEP, UK, G, EE)
C109	1-126-059-11	ELECT	10uF	20%	50V
C110	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C111	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C112	1-126-300-11	ELECT	0.47uF	20%	50V
C113	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C114	1-126-059-11	ELECT	10uF	20%	50V
C201	1-136-157-00	FILM	0.022uF	5%	50V
C202	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V (AEP, UK, G, EE)
C202	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V (Canadian, AUS, E, EA)
C203	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C204	1-130-475-00	MYLAR	0.0022uF	5%	50V (AEP, UK, G, EE)
C205	1-130-475-00	MYLAR	0.0022uF	5%	50V (AEP, UK, G, EE)
C205	1-131-587-11	TANTALUM	0.68uF	5%	35V (Canadian, AUS, E, EA)
C206	1-126-059-11	ELECT	10uF	20%	50V
C207	1-136-174-00	FILM	0.56uF	5%	50V (AEP, UK, G, EE)
C208	1-136-171-00	FILM	0.33uF	5%	50V (AEP, UK, G, EE)
C209	1-126-059-11	ELECT	10uF	20%	50V
C210	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C211	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C212	1-126-300-11	ELECT	0.47uF	20%	50V
C213	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C214	1-126-059-11	ELECT	10uF	20%	50V
C601	1-126-059-11	ELECT	10uF	20%	50V (AEP, UK, G, EE)
C601	1-124-994-11	ELECT	100uF	20%	10V (Canadian, AUS, E, EA)
C602	1-126-059-11	ELECT	10uF	20%	50V (AEP, UK, G, EE)
C602	1-124-994-11	ELECT	100uF	20%	10V (Canadian, AUS, E, EA)
C603	1-126-059-11	ELECT	10uF	20%	50V
C604	1-126-059-11	ELECT	10uF	20%	50V
C605	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C606	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C607	1-164-346-11	CERAMIC CHIP	1uF		16V
C608	1-126-161-11	ELECT	2.2uF	20%	50V
C609	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C610	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C611	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C612	1-162-568-11	CERAMIC CHIP	0.33uF	10%	16V
C613	1-164-346-11	CERAMIC CHIP	1uF		16V
C614	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C615	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C616	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C617	1-126-101-11	ELECT	100uF	20%	16V
C618	1-163-038-00	CERAMIC CHIP	0.1uF		25V

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description				Remarks
C619	1-163-141-00	CERAMIC CHIP	0.001uF	5%		50V
C620	1-164-232-11	CERAMIC CHIP	0.01uF			50V
C621	1-164-232-11	CERAMIC CHIP	0.01uF			50V
C622	1-124-994-11	ELECT	100uF	20%		10V
C623	1-163-038-00	CERAMIC CHIP	0.1uF			25V
C624	1-124-994-11	ELECT	100uF	20%		10V
C625	1-163-141-00	CERAMIC CHIP	0.001uF	5%		50V
C626	1-163-141-00	CERAMIC CHIP	0.001uF	5%		50V
C627	1-163-037-11	CERAMIC CHIP	0.022uF	10%		25V
C628	1-163-038-00	CERAMIC CHIP	0.1uF			25V
C629	1-163-038-00	CERAMIC CHIP	0.1uF			25V
C630	1-163-038-00	CERAMIC CHIP	0.1uF			25V
C631	1-163-038-00	CERAMIC CHIP	0.1uF			25V
C862	1-163-038-00	CERAMIC CHIP	0.1uF			25V
C6008	1-126-301-11	ELECT	1uF	20%		50V
C6009	1-164-232-11	CERAMIC CHIP	0.01uF			50V
C6010	1-163-038-00	CERAMIC CHIP	0.1uF			25V
C6011	1-163-129-00	CERAMIC CHIP	330PF	5%		50V
C6012	1-163-129-00	CERAMIC CHIP	330PF	5%		50V
C6013	1-126-023-11	ELECT	100uF	20%		16V
C6020	1-163-141-00	CERAMIC CHIP	0.001uF	5%		50V
C6021	1-163-141-00	CERAMIC CHIP	0.001uF	5%		50V
C6022	1-126-059-11	ELECT	10uF	20%		50V
C6026	1-163-125-00	CERAMIC CHIP	220PF	5%		50V
C6027	1-163-125-00	CERAMIC CHIP	220PF	5%		50V
C6029	1-163-141-00	CERAMIC CHIP	0.001uF	5%		50V
C6030	1-163-141-00	CERAMIC CHIP	0.001uF	5%		50V
C6031	1-163-038-00	CERAMIC CHIP	0.1uF			25V
C6032	1-163-141-00	CERAMIC CHIP	0.001uF	5%		50V
C6035	1-163-037-11	CERAMIC CHIP	0.022uF	10%		25V

< CONNECTOR >

CN601	1-573-101-11	SOCKET, CONNECTOR 9P	
CN602	1-580-783-11	CONNECTOR, BOARD TO BOARD	
CN603	1-573-101-11	SOCKET, CONNECTOR 9P	
CN604	1-580-783-11	CONNECTOR, BOARD TO BOARD	
* CN605	1-568-862-11	SOCKET, CONNECTOR 19P	
CN606	1-568-795-11	SOCKET, CONNECTOR 12P	
CN607	1-580-783-11	CONNECTOR, BOARD TO BOARD	

< DIODE >

Ref. No.	Part No.	Description		Remarks
D601	8-719-402-00	DIODE	MA3091	(AEP, UK, G, EE)
D601	8-719-401-90	DIODE	MA3082	(Canadian, AUS, E, EA)
D602	8-719-400-18	DIODE	MA152WK	
D603	8-719-400-18	DIODE	MA152WK	
D604	8-719-401-90	DIODE	MA3082	(Canadian, AUS, E, EA)
D605	8-719-401-51	DIODE	MA3056L	
D606	8-719-210-33	DIODE	EC10DS2	
D607	8-719-210-33	DIODE	EC10DS2	
D608	8-719-210-33	DIODE	EC10DS2	
D610	8-719-400-18	DIODE	MA152WK	
D611	8-719-400-18	DIODE	MA152WK	
D612	8-719-400-16	DIODE	MA153	

< IC >

IC101	8-759-300-71	IC	HD14053BFP	
IC102	8-752-037-90	IC	CXA1331M	(AEP, UK, G, EE)
IC102	8-752-050-13	IC	CXA1101M	(Canadian, AUS, E, EA)
IC103	8-752-055-60	IC	CXA1578M	
IC104	8-759-996-43	IC	RC4558PS	
IC105	8-759-516-47	IC	CD4066BCM	
IC601	8-759-058-40	IC	M50944-128FP	
IC602	8-759-636-67	IC	M50925-482FP	
IC603	8-759-207-05	IC	TA7272P	
IC604	8-759-996-43	IC	RC4558PS	
IC605	8-759-516-41	IC	CD4052BCM	

< COIL >

L6001	1-410-482-31	INDUCTOR	100uH
L6002	1-408-777-00	INDUCTOR CHIP	10uH

< TRANSISTOR >

Q101	8-729-421-22	TRANSISTOR	UN2211	
Q102	8-729-805-40	TRANSISTOR	2SC3900	
Q201	8-729-421-22	TRANSISTOR	UN2211	
Q202	8-729-805-40	TRANSISTOR	2SC3900	
Q601	8-729-805-65	TRANSISTOR	2SA1344	(AEP, UK, G, EE)
Q602	8-729-805-65	TRANSISTOR	2SA1344	(AEP, UK, G, EE)
Q603	8-729-421-22	TRANSISTOR	UN2211	(AEP, UK, G, EE)
Q604	8-729-805-65	TRANSISTOR	2SA1344	
Q605	8-729-805-69	TRANSISTOR	2SA1341	
Q607	8-729-805-65	TRANSISTOR	2SA1344	
Q608	8-729-805-65	TRANSISTOR	2SA1344	
Q609	8-729-421-22	TRANSISTOR	UN2211	
Q611	8-729-805-65	TRANSISTOR	2SA1344	
Q612	8-729-421-22	TRANSISTOR	UN2211	
Q613	8-729-421-22	TRANSISTOR	UN2211	
Q616	8-729-820-86	TRANSISTOR	2SB1121-ST	
Q617	8-729-820-86	TRANSISTOR	2SB1121-ST	
Q619	8-729-602-21	TRANSISTOR	2SC4154	
Q620	8-729-602-21	TRANSISTOR	2SC4154	

< RESISTOR >

R101	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R102	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R103	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R104	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R105	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R106	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	((AEP, UK, G, EE)

When indicating parts by reference number, please include the board name.

MAIN

Ref.No.	Part No.	Description				Remarks
R106	1-216-056-00	METAL GLAZE	2K	5%	1/10W	(Canadian, AUS, E, EA)
R107	1-216-082-00	METAL GLAZE	24K	5%	1/10W	(AEP, UK, G, EE)
R108	1-216-043-00	METAL CHIP	560	5%	1/10W	(AEP, UK, G, EE)
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W	(AEP, UK, G, EE)
R109	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(Canadian, AUS, E, EA)
R110	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R111	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R112	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R113	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R114	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W	
R115	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R120	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R201	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R202	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R203	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R204	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R205	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R206	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(AEP, UK, G, EE)
R206	1-216-056-00	METAL GLAZE	2K	5%	1/10W	(Canadian, AUS, E, EA)
R207	1-216-082-00	METAL GLAZE	24K	5%	1/10W	(AEP, UK, G, EE)
R208	1-216-043-00	METAL CHIP	560	5%	1/10W	(AEP, UK, G, EE)
R209	1-216-073-00	METAL CHIP	10K	5%	1/10W	(AEP, UK, G, EE)
R209	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(Canadian, AUS, E, EA)
R210	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R211	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R212	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R213	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R214	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W	
R215	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R220	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R601	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R603	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(AEP, UK, G, EE)
R603	1-216-073-00	METAL CHIP	10K	5%	1/10W	(Canadian, AUS, E, EA)
R605	1-216-081-00	METAL CHIP	22K	5%	1/10W	(AEP, UK, G, EE)
R605	1-216-089-00	METAL CHIP	47K	5%	1/10W	(Canadian, AUS, E, EA)
R606	1-216-081-00	METAL CHIP	22K	5%	1/10W	(AEP, UK, G, EE)
R606	1-216-089-00	METAL CHIP	47K	5%	1/10W	(Canadian, AUS, E, EA)
R607	1-216-081-00	METAL CHIP	22K	5%	1/10W	(AEP, UK, G, EE)
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W	(Canadian, AUS, E, EA)
R608	1-216-049-00	METAL CHIP	1K	5%	1/10W	(AEP, UK, G, EE)
R608	1-216-088-00	METAL CHIP	43K	5%	1/10W	(Canadian, AUS, E, EA)
R609	1-216-083-00	METAL CHIP	27K	5%	1/10W	(AEP, UK, G, EE)

Ref.No.	Part No.	Description				Remarks
R610	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R611	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R612	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R615	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R616	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R617	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R618	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R619	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R620	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R621	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R623	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R624	1-216-037-00	METAL CHIP	330	5%	1/10W	
R625	1-216-060-00	METAL GLAZE	3K	5%	1/10W	
R626	1-216-072-00	METAL CHIP	9.1K	5%	1/10W	
R628	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R629	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R630	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R631	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R634	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R635	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R636	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R637	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R638	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R639	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R640	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R641	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R642	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R643	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R644	1-216-025-00	METAL CHIP	100	5%	1/10W	
R645	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R646	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R647	1-216-025-00	METAL CHIP	100	5%	1/10W	
R648	1-216-025-00	METAL CHIP	100	5%	1/10W	
R649	1-216-025-00	METAL CHIP	100	5%	1/10W	
R650	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R651	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R652	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R653	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R654	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R655	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R656	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R661	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R662	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R663	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R664	1-216-045-00	METAL CHIP	680	5%	1/10W	
R665	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R666	1-216-045-00	METAL CHIP	680	5%	1/10W	
R667	1-216-025-00	METAL CHIP	100	5%	1/10W	
R668	1-216-090-00	METAL CHIP	51K	5%	1/10W	
R669	1-216-089-00	METAL CHIP	47K	5%	1/10W	

When indicating parts by reference number, please include the board name.

MAIN PANEL

Ref. No.	Part No.	Description	Remarks
R670	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R671	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R672	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R673	1-216-080-00	METAL CHIP 20K 5% 1/10W	
R674	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R675	1-216-080-00	METAL CHIP 20K 5% 1/10W	
R676	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R677	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R678	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R679	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R680	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R681	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R682	1-216-025-00	METAL CHIP 100 5% 1/10W	
R686	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R687	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R690	1-216-025-00	METAL CHIP 100 5% 1/10W	
R691	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R692	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R693	1-216-025-00	METAL CHIP 100 5% 1/10W	
R696	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R698	1-216-029-00	METAL CHIP 150 5% 1/10W	
R699	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R700	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R6001	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R6002	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R6004	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R6005	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R6010	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R6011	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R6012	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R6013	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R6014	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R6015	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R6016	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R6017	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R6018	1-216-298-00	METAL CHIP 2.2 5% 1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remarks
RV101	1-241-136-11	RES, ADJ, CARBON 10K (REC LEVEL L)	
RV201	1-241-136-11	RES, ADJ, CARBON 10K (REC LEVEL R)	

< SWITCH >

Ref. No.	Part No.	Description	Remarks
S601	1-554-303-21	SWITCH, TACTILE (ADJ. HIGH SPEED)	

< TEST PIN >

Ref. No.	Part No.	Description	Remarks
* TP601	1-564-517-11	PLUG, CONNECTOR 2P	

< CRYSTAL >

Ref. No.	Part No.	Description	Remarks
X601	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	

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Ref. No.	Part No.	Description	Remarks
*	A-2006-712-A	PANEL BOARD, COMPLETE(Canadian, AUS, E, EA)	
*	A-2006-715-A	PANEL BOARD, COMPLETE(AEP, G, EE)	
*	A-2006-792-A	PANEL BOARD, COMPLETE(UK)	

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< CAPACITOR >

Ref. No.	Part No.	Description	Remarks
C351	1-126-163-11	ELECT 4.7uF 20% 50V	
C352	1-124-638-11	ELECT 22uF 20% 10V	
C353	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C354	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C355	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C356	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
CN351	1-568-795-11	SOCKET, CONNECTOR 12P	

< DIODE >

Ref. No.	Part No.	Description	Remarks
D301	8-719-301-38	LED SEL2210S-C (DUBBING MODE)	
D302	8-719-301-38	LED SEL2210S-C (CD SYNCHRO)	

< FLUORESCENT INDICATOR >

Ref. No.	Part No.	Description	Remarks
FL351	1-519-708-11	INDICATOR TUBE, FLUORESCENT	

< IC >

Ref. No.	Part No.	Description	Remarks
IC351	8-759-323-35	IC HD614023-FA93	

< JUMPER WIRE >

Ref. No.	Part No.	Description	Remarks
JW302	1-216-295-00	METAL CHIP 0 5% 1/10W	

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R351	1-216-029-00	METAL CHIP 150 5% 1/10W	
R352	1-216-033-00	METAL CHIP 220 5% 1/10W	
R353	1-216-037-00	METAL CHIP 330 5% 1/10W	
R354	1-216-041-00	METAL CHIP 470 5% 1/10W	
R355	1-216-045-00	METAL CHIP 680 5% 1/10W	
R356	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R357	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	(AEP, UK, G, EE)
R357	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	(Canadian, AUS, E, EA)
R359	1-216-045-00	METAL CHIP 680 5% 1/10W	
R362	1-216-041-00	METAL CHIP 470 5% 1/10W	
R363	1-216-045-00	METAL CHIP 680 5% 1/10W	
R364	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R365	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R367	1-216-089-00	METAL CHIP 47K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remarks
R368	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R369	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R372	1-216-041-00	METAL CHIP 470 5% 1/10W	
R374	1-216-041-00	METAL CHIP 470 5% 1/10W	
R375	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R376	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R377	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R378	1-216-033-00	METAL CHIP 220 5% 1/10W	
R379	1-216-025-00	METAL CHIP 100 5% 1/10W	
R380	1-216-025-00	METAL CHIP 100 5% 1/10W	
R381	1-216-025-00	METAL CHIP 100 5% 1/10W	
		< SWITCH >	
S901	1-554-303-21	SWITCH, TACTILE (CD SYNCHRO)	
S902	1-554-303-21	SWITCH, TACTILE (AMS ◀◀)	
S903	1-554-303-21	SWITCH, TACTILE (AMS ▶▶)	
S904	1-554-303-21	SWITCH, TACTILE (REC ● DECK B)	
S905	1-692-064-11	SWITCH, TACTILE (DECK A)	
S906	1-692-064-11	SWITCH, TACTILE (DECK B)	
S907	1-554-303-21	SWITCH, TACTILE (RESET)	
S908	1-554-303-21	SWITCH, TACTILE (DOLBY NR)	
S909	1-554-303-21	SWITCH, TACTILE (DUBBING MODE)	
S910	1-554-303-21	SWITCH, TACTILE (■)	
S911	1-554-303-21	SWITCH, TACTILE (▷)	
S912	1-554-303-21	SWITCH, TACTILE (◁)	
S913	1-554-303-21	SWITCH, TACTILE (PAUSE ❚❚ DECK B)	
S914	1-554-303-21	SWITCH, TACTILE (DIRECTION MODE)	
		< CRYSTAL >	
X351	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)	
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*	A-2006-713-A	POWER BOARD, COMPLETE(Canadian, AUS, E, EA)	
*	A-2006-716-A	POWER BOARD, COMPLETE(AEP, G, EE)	
*	A-2006-793-A	POWER BOARD, COMPLETE(UK)	
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		< CAPACITOR >	
C501	1-124-598-11	ELECT 22uF 20% 25V	
C502	1-124-556-11	ELECT 2200uF 20% 16V	
C503	1-124-556-11	ELECT 2200uF 20% 16V	
C504	1-124-910-11	ELECT 47uF 20% 50V	
C505	1-126-163-11	ELECT 4.7uF 20% 50V	
C506	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C507	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C508	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C509	1-126-022-11	ELECT 47uF 20% 16V	
C510	1-126-022-11	ELECT 47uF 20% 16V	
C511	1-126-163-11	ELECT 4.7uF 20% 50V	
C512	1-126-163-11	ELECT 4.7uF 20% 50V	
C513	1-124-478-11	ELECT 100uF 20% 25V	
C514	1-126-053-11	ELECT 220uF 20%	35V
C515	1-124-910-11	ELECT 47uF 20%	50V
C516	1-124-478-11	ELECT 100uF 20%	25V
C517	1-124-478-11	ELECT 100uF 20%	25V
C518	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C519	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C520	1-126-954-11	ELECT 3300uF 20%	35V
C521	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
		< CONNECTOR >	
CN501	1-691-907-11	PIN, CONNECTOR 15P	
CN502	1-568-802-11	SOCKET, CONNECTOR 19P	
		< DIODE >	
D501	8-719-210-33	DIODE EC10DS2	
D502	8-719-210-33	DIODE EC10DS2	
D503	8-719-210-33	DIODE EC10DS2	
D504	8-719-210-33	DIODE EC10DS2	
D505	8-719-210-33	DIODE EC10DS2	
D506	8-719-210-33	DIODE EC10DS2	
D507	8-719-400-18	DIODE MA152WK	
D508	8-719-401-71	DIODE MA3068L	
D509	8-719-401-51	DIODE MA3056L	
D510	8-719-401-51	DIODE MA3056L	
D511	8-719-210-33	DIODE EC10DS2	
D512	8-719-210-33	DIODE EC10DS2	
D513	8-719-402-70	DIODE MA3180	
D514	8-719-210-33	DIODE EC10DS2	
D515	8-719-210-33	DIODE EC10DS2	
D516	8-719-210-33	DIODE EC10DS2	
D517	8-719-210-33	DIODE EC10DS2	
		< FUSE >	
⚠F501	1-532-778-21	FUSE, MICRO 1.6A 125V(Canadian, AUS, E, EA)	
⚠F502	1-532-778-21	FUSE, MICRO 1.6A 125V(Canadian, AUS, E, EA)	
		< IC >	
IC501	8-759-996-43	IC RC4558PS	
		< IC LINK >	
⚠ICP501	1-532-841-21	LINK, IC (AEP, UK, G, EE)	
⚠ICP502	1-532-841-21	LINK, IC (AEP, UK, G, EE)	
		< JUMPER WIRE >	
JW501	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW502	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW503	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW504	1-216-296-00	METAL CHIP 0 5% 1/8W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

POWER

< TRANSISTOR >

Ref. No.	Part No.	Description	Remarks
Q502	8-729-602-21	TRANSISTOR 2SC4154	
Q503	8-729-209-15	TRANSISTOR 2SD2012	
Q504	8-729-805-44	TRANSISTOR 2SC3397	
Q505	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q506	8-729-209-15	TRANSISTOR 2SD2012	
Q507	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q508	8-729-421-22	TRANSISTOR UN2211	

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R501	1-247-752-11	CARBON 1K 5% 1/2W	
R502	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R503	1-216-041-00	METAL CHIP 470 5% 1/10W	
R504	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R505	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R506	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R507	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R508	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R509	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R510	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R511	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R512	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R513	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R514	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R516	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R517	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

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MISCELLANEOUS
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Ref. No.	Part No.	Description	Remarks
10	1-690-892-11	WIRE (FLAT TYPE) (12 CORE)	
23	1-590-902-11	WIRE, FLAT TYPE (9 CORE)	
26	1-690-893-11	WIRE (FLAT TYPE) (19 CORE)	
28	1-690-878-11	CORD (WITH CONNECTOR)	
172	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
* 177	1-690-419-11	WIRE, LEAD(WITH CONNECTOR)4CORE	
HP901	A-2003-958-B	BASE ASSY, HEAD (DECK A)	
HRPE901	A-2003-838-A	BASE ASSY, HEAD (DECK B)	
M901A	X-3359-417-1	CAPSTAN MOTOR ASSY (DECK A)	
M901B	X-3359-417-1	CAPSTAN MOTOR ASSY (DECK B)	
M902A	X-3363-501-1	REEL MOTOR ASSY (DECK A)	
M902B	X-3363-501-1	REEL MOTOR ASSY (DECK B)	

****

HARDWARE LIST

Ref. No.	Part No.	Description	Remarks
#1	7-621-773-93	SCREW (PANEL 2.6 TP2)	
#2	7-621-255-15	SCREW +PTT 2X3 (S)	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-682-547-04	SCREW +BVTT 3X6 (S)	
#6	7-621-775-00	SCREW +B 2.6X3	
#7	7-627-556-08	SCREW +P 2.6X2.8	

When indicating parts by reference number, please include the board name.

Sony Corporation
Audio Group

English
92E1917-1
Printed in Japan
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Published by Customer Relations and Service Group

9-957-006-12

TC-H1700

SONY

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

SUPPLEMENT-1

File this supplement with the service manual.

Additional of Italian model.

- For Italian model, see the description on Germany model in the 9-957-006-11 service manual.

English
92E1917-1
Printed in Japan

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Sony Corporation
Audio Group

9-957-006-81

Published by Customer Relations and Service Group

HCD-H1700

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model
East European Model

Photo : AEP model

This set is the deck, CDP amplifier section in MHC-1700 and FH-E656.

Model Name Using Similar Mechanism	CDP-H3600
CD Mechanism Type	CDM13BC-5BD4 or CDM13BC-5BD4A
Base Unit Name	BU-5BD4 or BU-5BD4A

SPECIFICATIONS

Tuner Section

System	FM stereo, FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5 – 108 MHz
Antenna terminals	75 ohms unbalanced
Intermediate frequency	10.7 MHz
AM tuner section	
Tuning range	AEP, UK, Germany, East European model MW : 531 – 1,602 kHz LW : 153 – 279 kHz Australian, E, Saudi Arabia model MW : 531 – 1,602 kHz SW : 5.95 – 17.9 MHz
Antenna	AM loop antenna External antenna terminals
Intermediate frequency	450 kHz

Amplifier Section

Continuous RMS power output	30 + 30 watts (6 ohms at 1 kHz, 5% THD) (AEP, UK, Germany, East European model) 28 +28 watts (6 ohms, DIN, 1kHz)
Music power output	(AEP, UK, Germany, East European model) 45 +45 watts
Peak music power output (AEP, UK, Germany, East European model)	280 watts (6 ohms)
Inputs	MIX MIC (minijack) (Australian, E, Saudi Arabia model) sensitivity 1 mV, impedance 600 ohms DAT IN : sensitivity 450 mV, impedance 47 kilohms For Except E, Saudi Arabia model PHONO (phono jacks): sensitivity 5mV, impedance 47 kilohms

– continued on next page –

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.

使用時は添付資料も参照のこと
Refer to the additional documents.

MINI Hi-Fi COMPONENT SYSTEM

SONY®

	E, Saudi Arabia model VIDEO/AUX (phono jacks): sensitivity 450 mV, impedance 47 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more. SPEAKER: accepts speakers of 6 to 16 ohms

Compact Disc Player Section

System	Compact disc digital audio system
Laser	Semiconductor laser (λ = 780 nm) Emission duration: continuous
Laser output	Max. 44.6 μW* * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Signal to noise ratio	More than 90 dB
Dynamic range	More than 90 dB
Harmonic distortion	Less than 0.05% (at 1 kHz)
Channel separation	More than 90 dB

General

Power requirements	AEP, Germany, East European model : 220 – 230 V, 50/60 Hz UK, Australian model : 240 V, 50Hz E, Saudi Arabia model : 110 – 120 V or 220 – 240 V AC adjustable, 50/60 Hz
Power consumption	AEP, Germany, East European model : 90 watts U.K. model : 175 watts Australian, E, Saudi Arabia model : 90 watts
Dimensions	Tuner/Amplifier/CD player Approx. 255×125×265 mm (w/h/d) (8 7/8 × 5 × 10 1/2 inches)
Weight	Tuner/Amplifier/CD Player Approx. 4.5 kg (9 lb 15 oz)
Supplied accessories	Remote commander (1) Sony SUM-3 (NS) batteries (2) AM loop antenna (1) FM antenna (1) AC power cord (1) Speaker cord (2) (Australian, E, Saudi Arabia model)

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

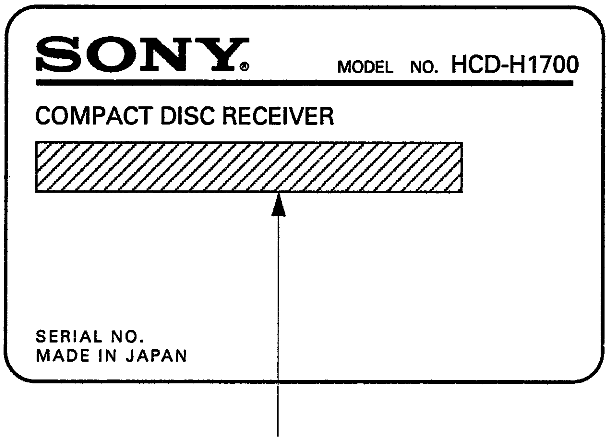
The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

MODEL IDENTIFICATION

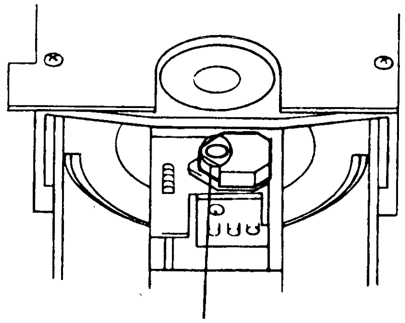
– SPECIFICATION LABEL –



AEP, Germany,
East European MODEL : AC 220 - 230V~, 50/60Hz, 90W
UK MODEL : AC240V, 50Hz, 175W
Australian MODEL : AC240V, 50Hz, 90W
E, Saudi Arabia MODEL : AC110 - 120, 220 - 240V, 50/60Hz, 90W

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



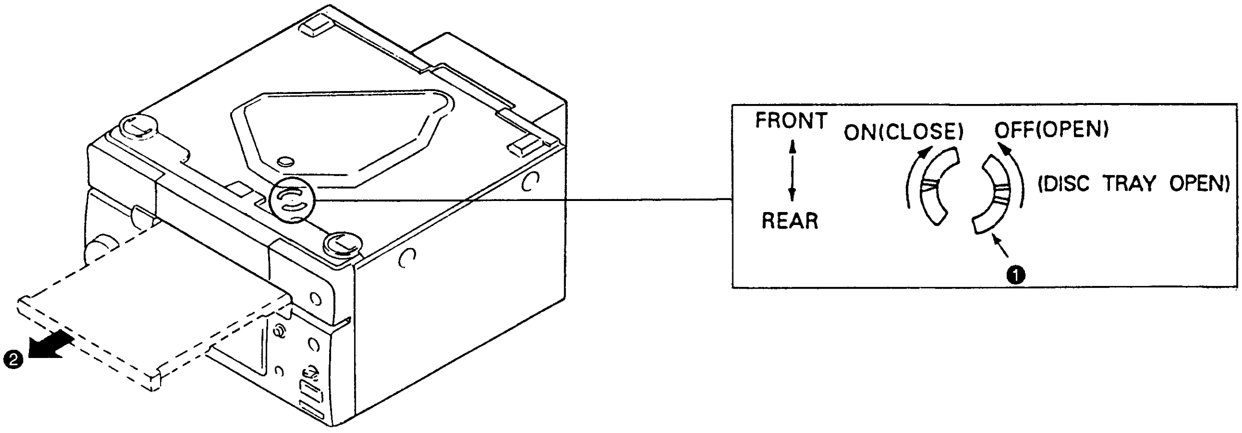
❶ Confirm that laser beam is spread.
❷ Up and down motion of the objective lens. (3 times)

SECTION 1
SERVICE NOTE

1-1. HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF

(1) Insert to ❶ for tapering driver, etc., and turn in the direction of arrow OFF. (Disc tray open)

(2) Tray as come out little of front panel, pull out in the direction of arrow ❷ by hand.

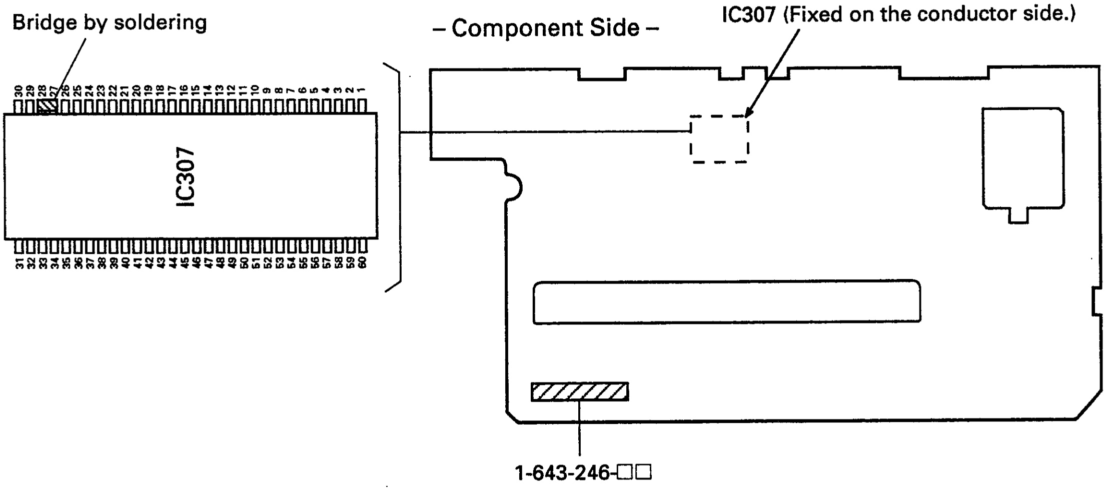

FRONT
REAR
ON(CLOSE)
OFF(OPEN)
(DISC TRAY OPEN)
❶
❷

1-2. PRECAUTIONS AFTER REPLACING IC307 IN THE PANEL BOARD

If the IC307 in the panel board with "-11" or "-12" indicated at the trailing end of the marking, operate the equipment as follows.

- No pattern is connected to the reset terminal of the IC307 (Pin 28), so bridge the pins 27 and 28 or 27, 28 and 29 by soldering. With the board indicated "-13" at the trailing end of the marking, the work above need not be activated.

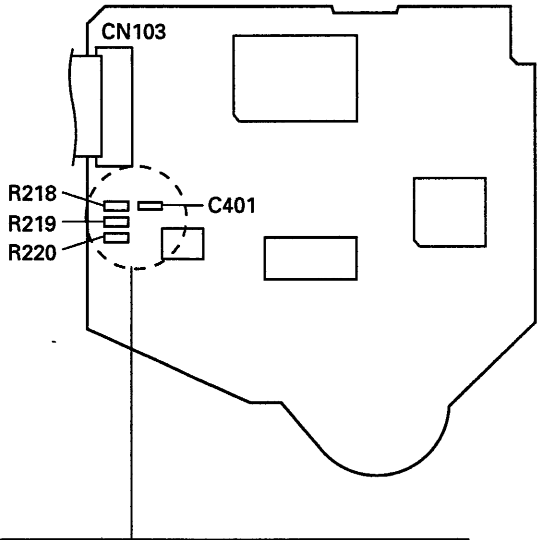
[PANEL BOARD]


Bridge by soldering
- Component Side -
IC307 (Fixed on the conductor side.)
IC307
1-643-246-□□

1-3. CD MECHANISM (CDM13BC-5BD4 or CDM13BC-5BD4A) and BASE UNIT (BU-5BD4 or BU-5BD4A)

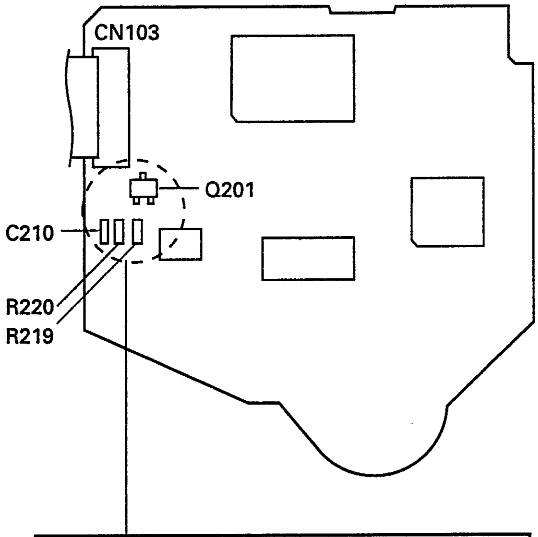
- CD mechanism units and base units used in the equipment are classified into CDM13BC-5BD4 and CDM13BC-5BD4A (BU-5BD4 and BU-5BD4A). Either type can be discriminated as follows.

[BD BOARD] – Conductor Side –



CD Mechanism Unit	CDM13BC-5BD4
Base Unit	BU-5BD4

[BD BOARD] – Conductor Side –



CD Mechanism Unit	CDM13BC-5BD4A
Base Unit	BU-5BD4A

For each schematic diagram, printed wiring boards and parts list, see the following table.

	CDM13BC-5BD4 and BU-5BD4	CDM13BC-5BD4A and BU-5BD4A
Schematic Diagram	Page 43 – 45	Page 49 – 51
Printed Wiring Board	Page 40 – 42	Page 46 – 48
Parts List	Page 77, 78	Page 78 – 80

SECTION 2
GENERAL

This section is extracted from instruction manual.

Parts Identification

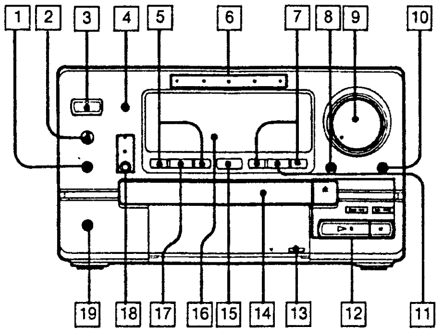
Refer to the pages indicated in ● for use of the buttons.

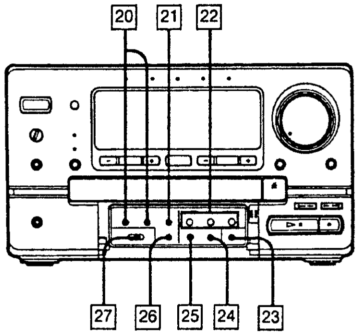
Tuner/Amplifier/CD Player Section A

1 MIX MIC (mixing microphone) input jack (minijack) **(Australian, E, Saudi Arabia model)**
2 MIC (microphone) LEVEL control **(Australian, E, Saudi Arabia model)**
3 SYSTEM POWER button
4 Remote control sensor
5 –/+ buttons
6 Preset equalizer setting indicators
7 TOTAL EFFECT CONTROL –/+ buttons

8 DIRECT button
9 VOLUME control
10 WAKE UP VOL SET button
11 PRESET button
12 CD operation buttons
    ⏏ : OPEN/CLOSE
    ■ : Stop
    ▷II : Play/pause
    ⏮◀◀ ▶▶⏭ : Manual search (when kept depressed)/Automatic Music Sensor (when pressed)
13 ▽OPEN tab
14 Disc tray
15 FUNCTION button
16 Display window
17 BAND button
18 TUNING MODE button and PRESET/TUNING indicators
19 HEADPHONES jack (stereo minijack)
20 CLOCK SET /WAKE UP 1, 2 buttons
21 TIMER REC button
22 PLAY MODE buttons
    CONTINUE button
    SHUFFLE button
    PROGRAM button
23 STEREO/MONO button
24 CHECK button
25 EDIT/TIME FADE button
26 MEMORY/NEXT button
27 KARAOKE PON button **(E, Saudi Arabia, East European model)**

A

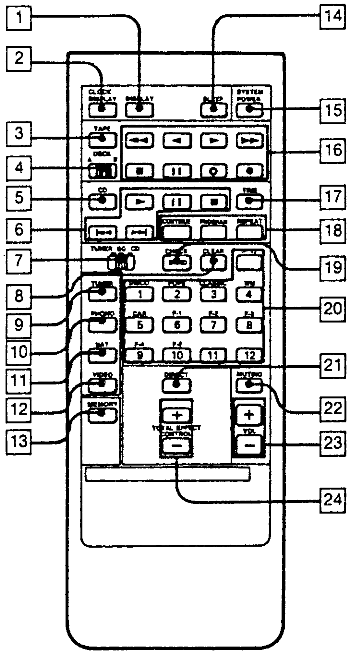




Remote Commander C

1 DISPLAY button
2 CLOCK DISPLAY button
3 Cassette deck select button
4 DECK A/B selector
5 CD player select button
6 CD player operation buttons
7 TUNER/EQ/CD selector
8 CLEAR button
9 Tuner select button
10 PHONO select button **(except, E, Saudi Arabia model)**
11 DAT select button
12 VIDEO select button **(E, Saudi Arabia model)**
13 MEMORY button
14 SLEEP timer button
15 SYSTEM POWER button
16 Tape operation buttons
17 TIME button
18 PLAY MODE buttons
19 CHECK (CD player) / BAND (tuner) button
20 TUNER/EQ/CD numeric buttons
21 DIRECT button
22 MUTING button
23 VOLUME +/– control buttons
24 TOTAL EFFECT CONTROL +/– buttons

C

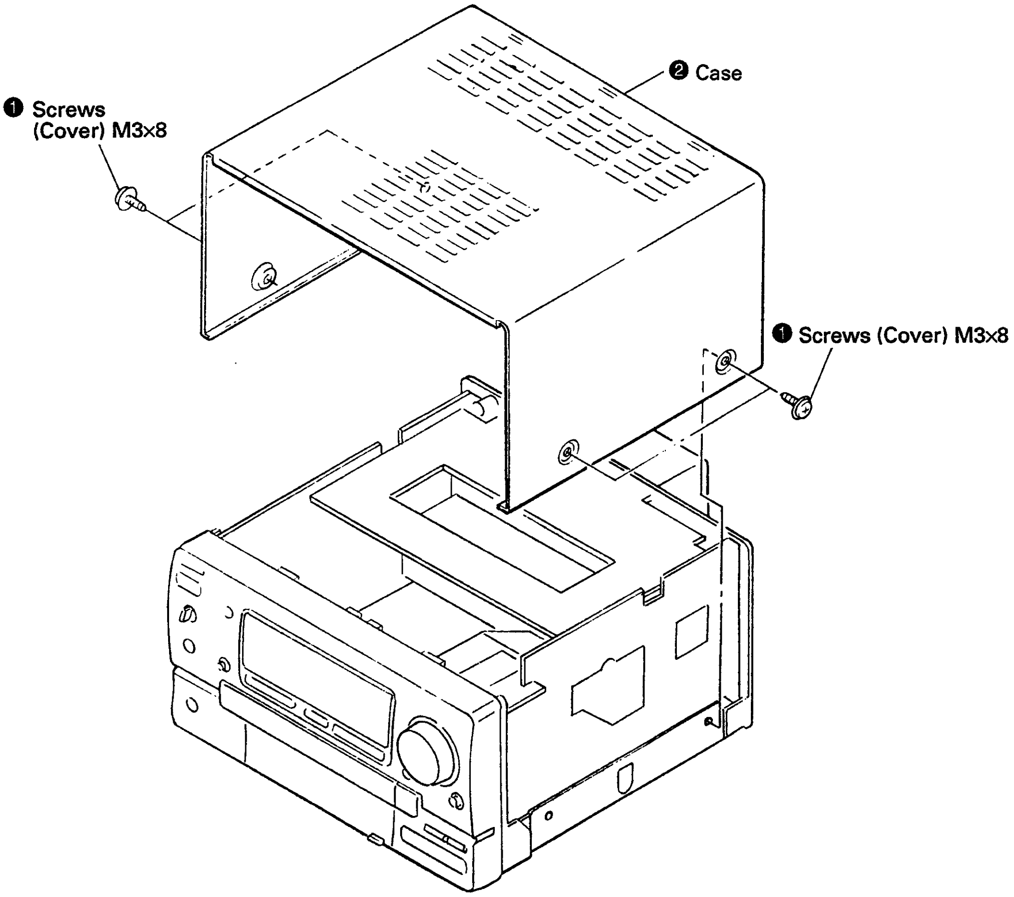

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
CLOCK DISPLAY
DISPLAY
SLEEP
SYSTEM POWER
TAPE
DECK
CD
TIME
CONTINUE
PROGRAM
REPEAT
TUNER EQ CD
CHECK
CLEAR
TUNER
PHONO
DAT
VIDEO
MEMORY
DIRECT
MUTING
TOTAL EFFECT CONTROL
VOL
1
2
3
4
5
6
7
8
9
10
11
12

SECTION 3

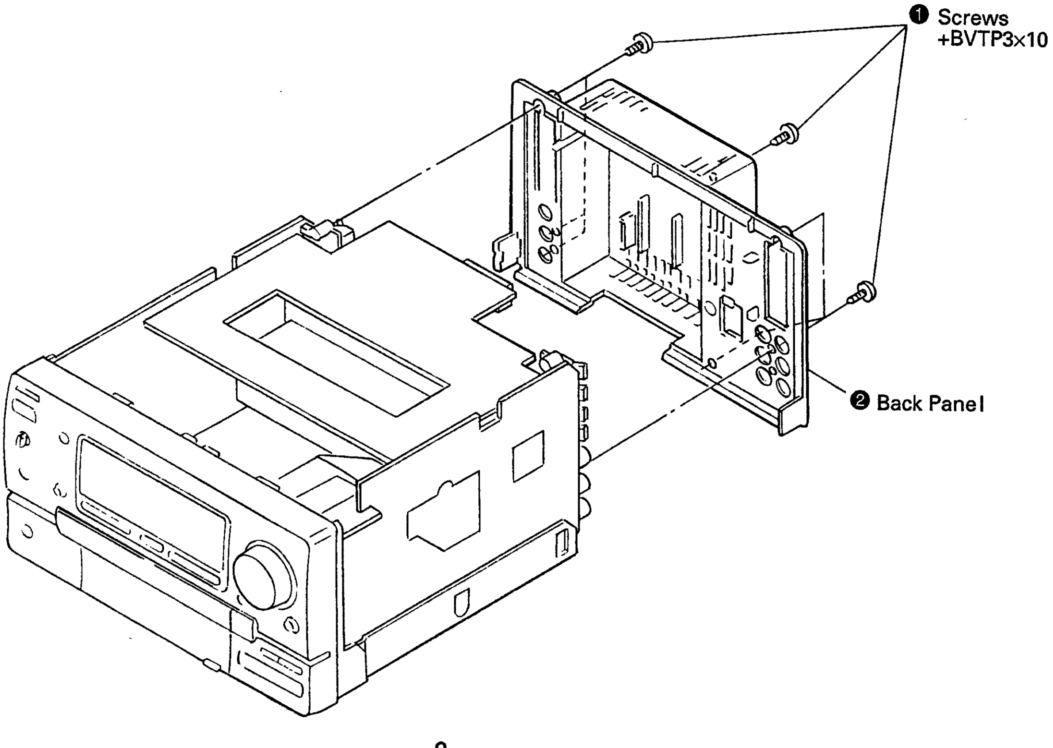
DISASSEMBLY

- **Remove the following devices shown by ❶, etc. in the order of the numbers.**

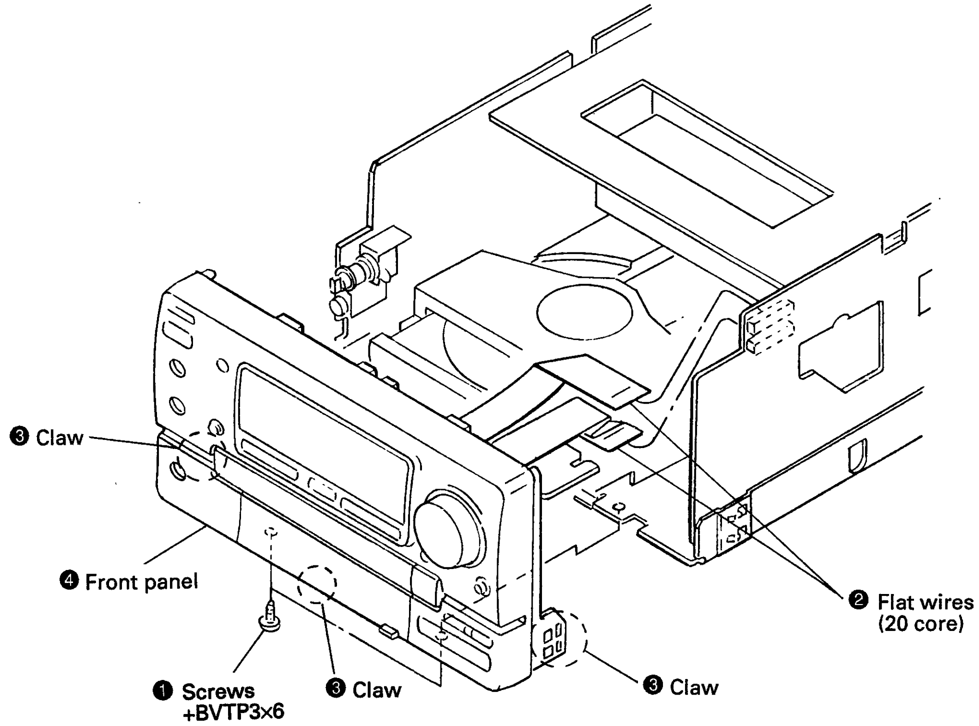
CASE


❷ Case
❶ Screws (Cover) M3×8
❶ Screws (Cover) M3×8

BACK PANEL

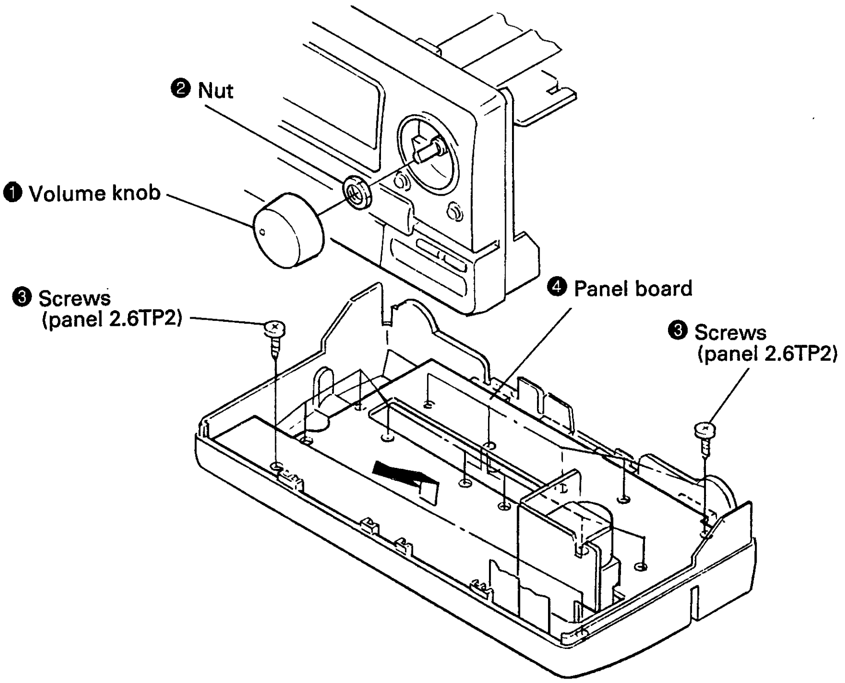

❶ Screws +BVTP3×10
❷ Back Panel

FRONT PANEL



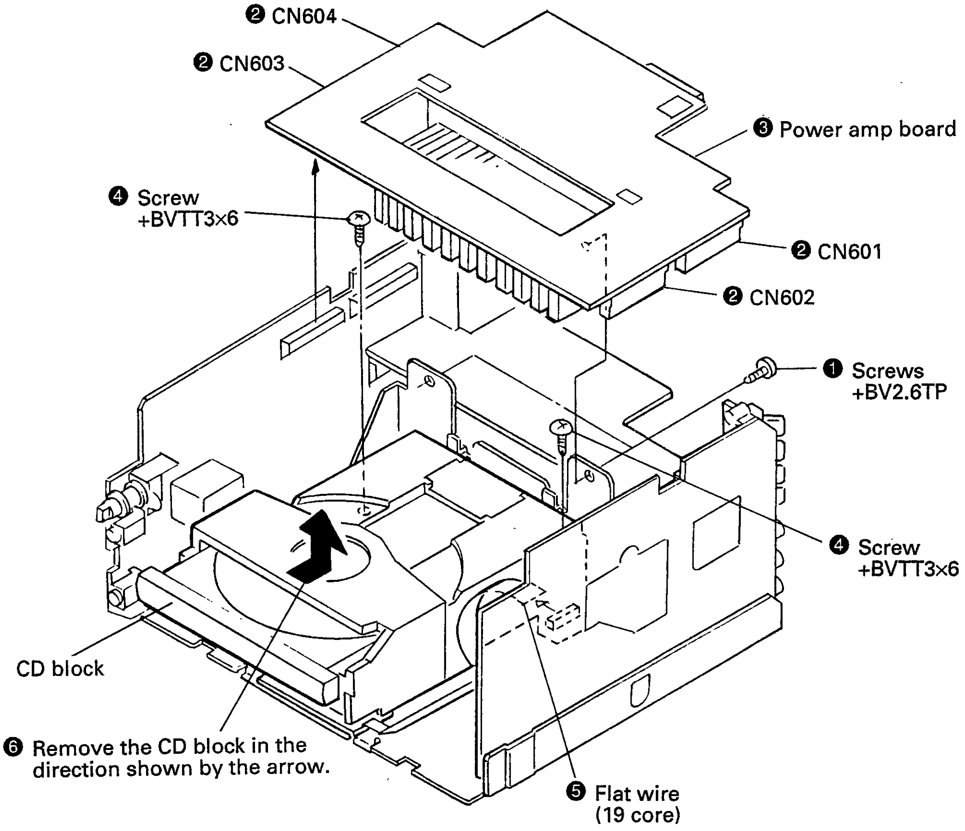
❸ Claw
❹ Front panel
❶ Screws +BVTP3×6
❸ Claw
❸ Claw
❷ Flat wires (20 core)

PANEL BOARD

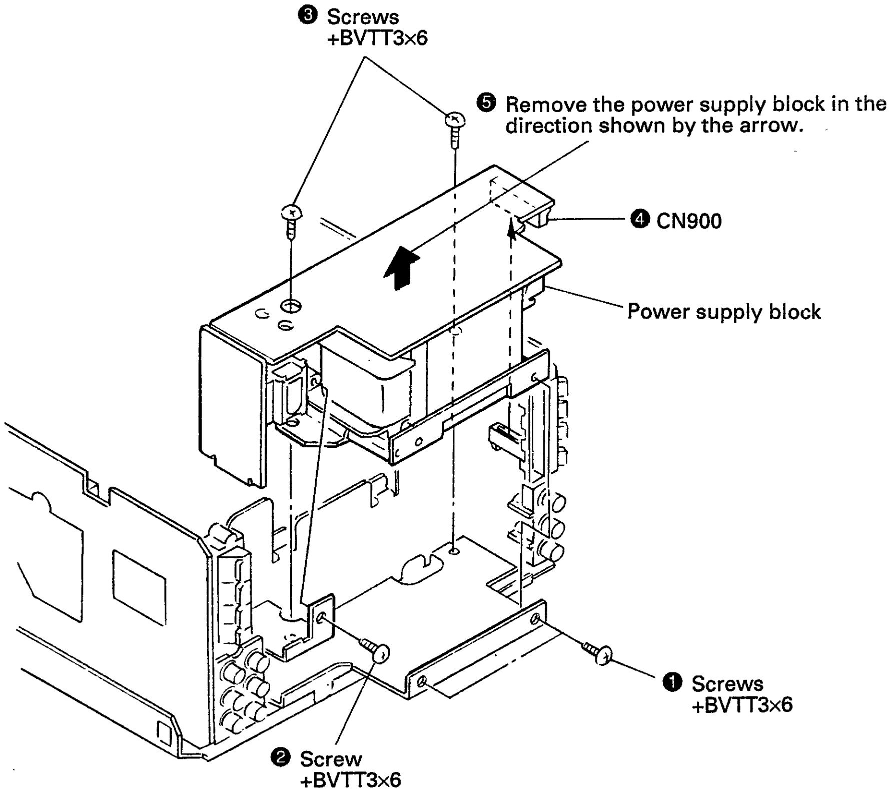


❷ Nut
❶ Volume knob
❸ Screws (panel 2.6TP2)
❹ Panel board
❸ Screws (panel 2.6TP2)

POWER AMP BOARD, CD BLOCK


❷ CN604
❷ CN603
❸ Power amp board
❹ Screw
+BVTT3×6
❷ CN601
❷ CN602
❶ Screws
+BV2.6TP
❹ Screw
+BVTT3×6
CD block
❻ Remove the CD block in the direction shown by the arrow.
❺ Flat wire
(19 core)

POWER SUPPLY BLOCK


❸ Screws
+BVTT3×6
❺ Remove the power supply block in the direction shown by the arrow.
❹ CN900
Power supply block
❶ Screws
+BVTT3×6
❷ Screw
+BVTT3×6

SECTION 4
ADJUSTMENTS

4-1. TEST MODE

1. Checking of the keys, FL tubes and the equalizer and resetting of the memory

The test mode is activated by the following methods. The test mode is reset by pressing the POWER key.

(1) Checking of the keys and FL tubes
This mode is actuated by pressing the POWER key while simultaneously pressing the EFFECT+ and WAKE UP1 keys.

All FL tubes light up.
↓
With a key other than EFFECT+, WAKE UP1 or POWER key pressed, indication peculiar to each key is displayed.
↓
Press the POWER key.

The test is completed.

(2) Checking of the timer and resetting of the memory
This mode is actuated by pressing the POWER key while simultaneously pressing the EFFECT+ and WAKE UP2 keys.

Note: Once it is activated, data in the preset memory is erased while returning to the initial state. Before beginning the test, write out preset contents and, after completion of testing, be sure to set the memory to the state previous to repairing.

(3) Checking of the equalizer (keys)
This mode is actuated by pressing the POWER key while simultaneously pressing the EFFECT+ and TIMER keys.
The indication tube displays "EQ check" while waiting for keying-in.
You can check the equalizer by pressing the following keys.

EFFECT+ : The 10's place of the equalizer is activated.
DIRECT : The 5's place of the equalizer is activated.
EFFECT– : The 0's place of the equalizer is activated.

(4) Forced cold start
While pressing the POWER key with the power cord disconnected, connect the power cord. Thus, the internal RAM and the non-volatile memory are reset.

Note: Thus, preset data in the memory is erased while returning to the initial state. Before beginning the test, write out preset contents of the memory and, after completion of testing, be sure to set the memory to the state before repairing.

2. Test Modes of CD Syscon (IC202)

(1) ADJUST mode
When this mode is effected, the machine is operated normally except for the following.

- When pin ⑲, IC202 (ADJ) is set to "L" after turning ON the POWER switch:

1. GFS is no longer monitored during PLAY, PAUSE or SEARCH, while not stopping even with GFS remaining still at "L" (NG).
2. No high-speed feeding is activated during SEARCH.
3. Focus gain is reset to normal gain during PLAY (normally, the gain is lowered to reduce noise when FOCUS is locked).

- When Pin ⑬, IC202 (AFADJ) is set to "L" after turning ON the POWER switch:

4. Regardless of Pin ⑲ (ADJ) of the CLV-S fixed function, the CLV mode during PLAY becomes CLV-S (rough servo) only while Pin ⑬ remains "L".

(2) AFADJUST mode
In this mode, it is possible to check the interface between the display micon (IC301) and CD syscon (IC202).

- Set Pin ⑬, IC202 (AFADJ) to "L" before turning ON the POWER switch.

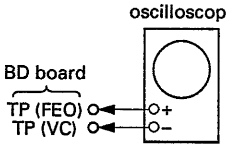
1. Every time the ⏏ key is pressed after turning On the POWER switch, indication on the FL tube is switched correspondingly.

4-2. CD SECTION CHECKING

Note :

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

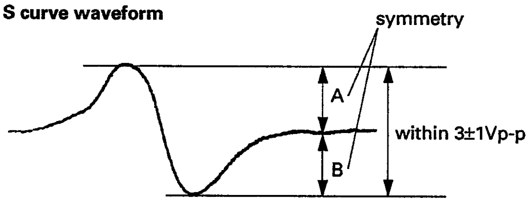
S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.

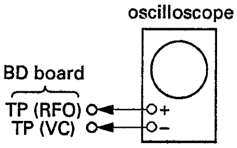
S curve waveform



5. After check, remove the lead wire TP(FES) connected in step 2.

Note :
- Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check



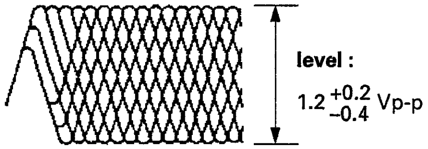
Procedure :

1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

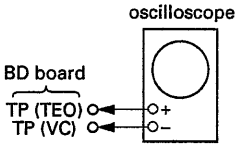
Note :
Clear RF signal waveform means that the shape " ◊ " can be clearly distinguished at the center of the waveform.

RF signal waveform

VOLT/DIV : 200mV
(Used probe = 10:1)
TIME/DIV : 500nS



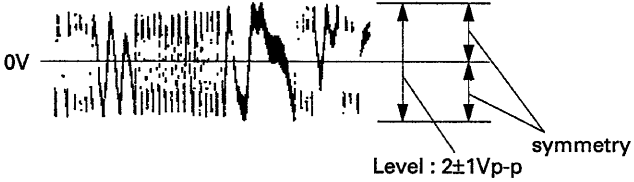
E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse oscilloscope

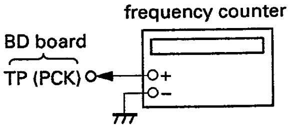


6. Remove the lead wire (TP [ADJ] and TP [TES]) connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PCK) with lead wire.


frequency counter
BD board
TP (PCK)
+
–

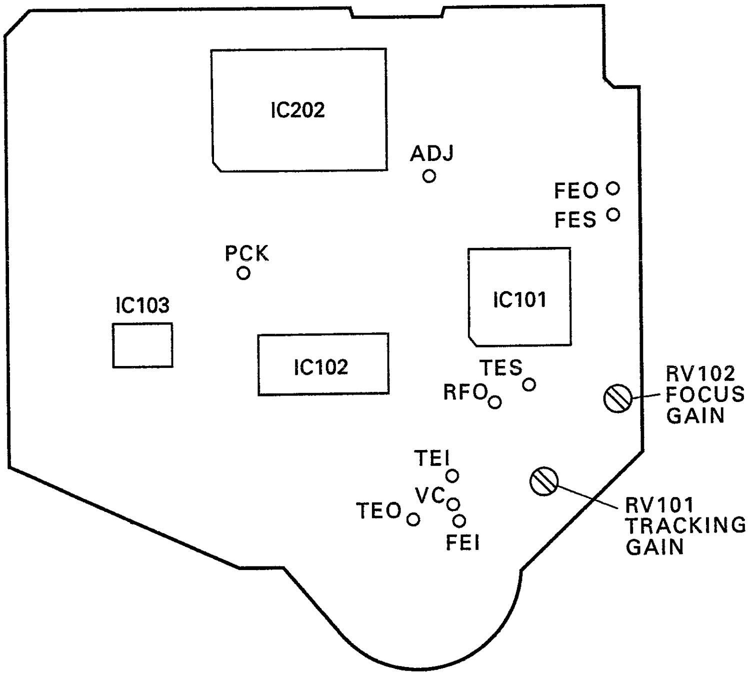
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off.
There is no problem.
Therefore, do not perform, this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location :

[MAIN BOARD] – Component Side –

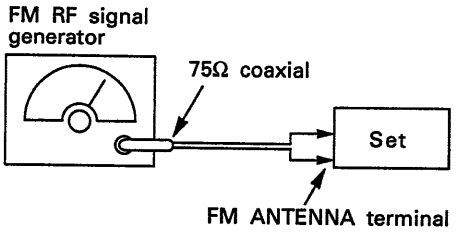

IC202
ADJ
FEO
FES
PCK
IC103
IC101
IC102
TES
RFO
RV102
FOCUS
GAIN
TEI
VC
TEO
FEI
RV101
TRACKING
GAIN

4-3. TUNER SECTION ADJUSTMENTS

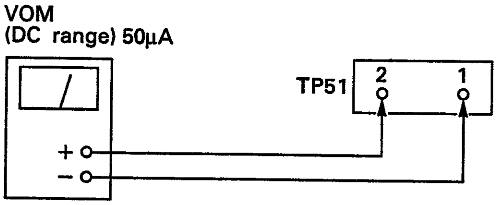
FM SECTION

Note : The FM front-end is carefully adjusted at the factory and is supplied as one whole block for replacement.

Setting :


FM RF signal generator
75Ω coaxial
Set
FM ANTENNA terminal

Carrier frequency	: 98MHz
Modulation	: 1kHz, 40kHz deviation (AEP, UK, Germany, East European model) 1kHz, 75kHz deviation (Australian, E, Saudi Arabia model)
Output level	: 1mV (60dBμ)


VOM
(DC range) 50μA
TP51
2
1
+
−

FM Discriminator Alignment (NULL Check)

BAND switch: FM

Procedure:

1. Supply a 1mV (60dBμ) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust IFT51 for 0V reading on the VOM.

Adjustment Location : TUNER board.

Note : FM tuned indication lighting level adjustment should be made after FM discriminator alignment.

FM Tuned Indication Lighting Level Adjustment

BAND switch: FM

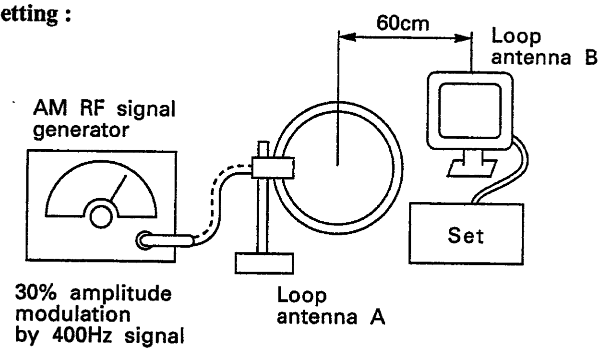
Procedure:

1. Supply a 22.5μV (27dBμ) (Except Germany model) or 12.5μV (22dBμ) (Germany model) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV52 so that the TUNED light up.
4. Confirm that the TUNED light off with FM RF SSG output level set at –3dB.

Adjustment Location : TUNER board.

MW SECTION

Setting :


60cm
Loop antenna B
AM RF signal generator
Set
30% amplitude modulation by 400Hz signal
Loop antenna A

MW Tuned Indication Lighting Level Adjustment

BAND switch: MW

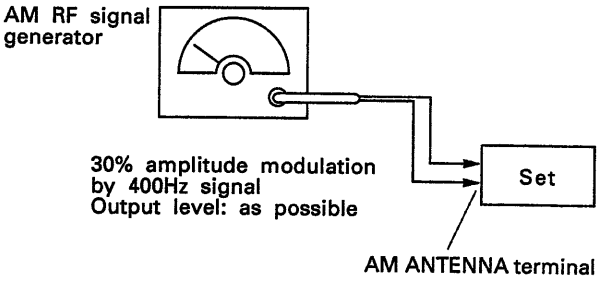
Procedure:

1. Set loop antenna A so that the loop antenna B input level becomes 1mV (60dBμ).
2. Tune the set to 1,404kHz (9k step mode) (10k step mode : 1,490kHz).
3. Adjust the RV51 so that the TUNED light up.
4. Confirm that the TUNED light off with AM RF SG output level set at –3dB.

Adjustment Location : TUNER board.

SW SECTION (E, Saudi Arabia Model only)

Setting :


AM RF signal generator
30% amplitude modulation by 400Hz signal
Output level: as possible
Set
AM ANTENNA terminal

SW Tracking Adjustment

BAND switch: SW

Adjust for maximum reading on VTVM.	
17MHz	CV1
7MHz	T1

Adjustment Location : TUNER board.

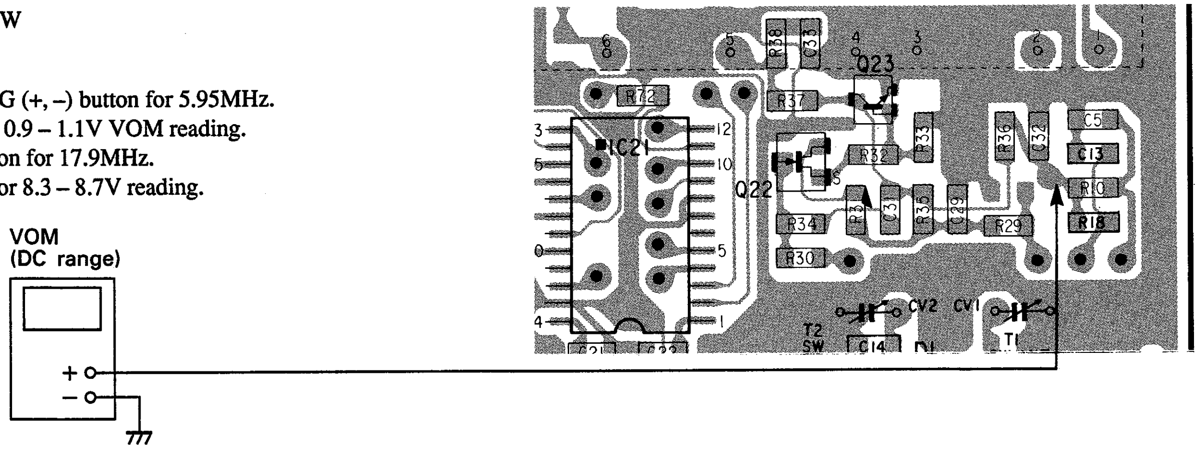
SW OSC Voltage Adjustment

BAND switch: SW

Procedure:

1. Press TUNING (+, –) button for 5.95MHz.
   Adjust T2 for 0.9 – 1.1V VOM reading.
2. Press the button for 17.9MHz.
   Adjust CV2 for 8.3 – 8.7V reading.

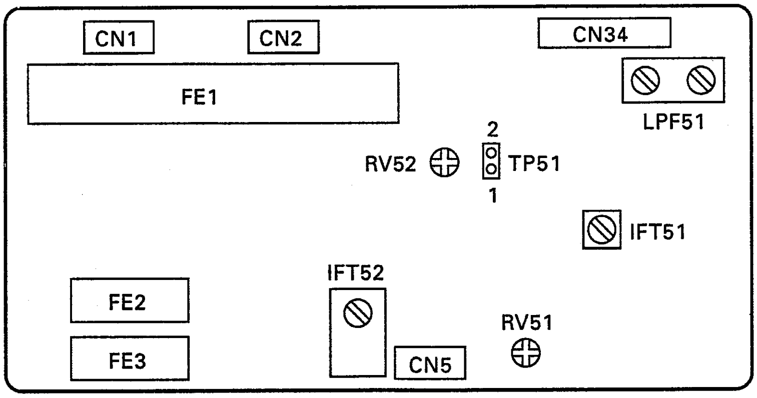
[TUNER BOARD] – Conductor Side –


VOM
(DC range)
+
–
IC21
Q22
Q23
R72
R37
R38
C33
R32
R33
R36
C32
C5
C13
R10
R18
R34
R30
R3
C31
R35
C29
R29
CV2
CV1
T2
SW
C14
T1
3
5
0
4
12
10
5
1
6
5
4
3
2
1

Adjustment Location : TUNER board.

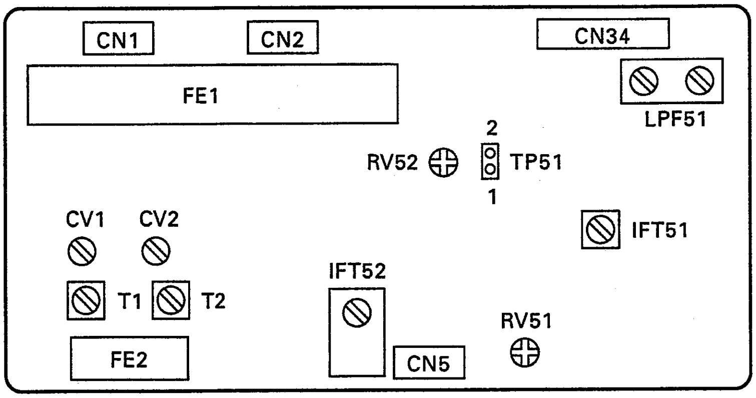
– AEP, UK, Germany, East European Model –

[TUNER BOARD] – Component Side –


CN1
CN2
CN34
FE1
LPF51
2
RV52
TP51
1
IFT51
IFT52
FE2
FE3
RV51
CN5

– Australian, E, Saudi Arabia Model –

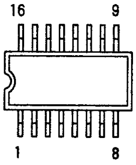
[TUNER BOARD] – Component Side –


CN1
CN2
CN34
FE1
LPF51
2
RV52
TP51
1
CV1
CV2
IFT51
T1
T2
IFT52
RV51
FE2
CN5

SECTION 5
DIAGRAMS

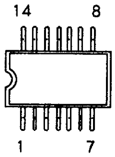
5-1. SEMICONDUCTOR LEAD LAYOUTS

CD4052BCM
CD4053BCM
M66312FP

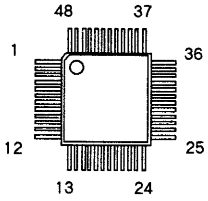


(TOP VIEW)

CD4066BCM
SN74HCU04ANS

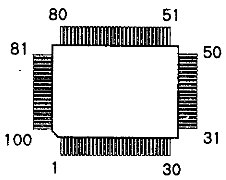


CXA1372AQ

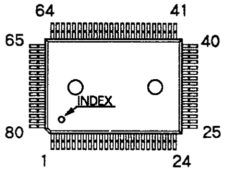

48
37
1
36
12
25
13
24

(TOP VIEW)

CXA1492AQ

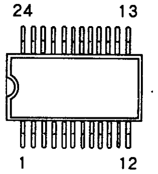

80
51
81
50
100
31
1
30

CXD2500AQ
CXD2505Q


64
41
65
40
INDEX
80
25
1
24

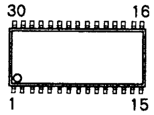
MARKING SIDE VIEW

CXD2554M
LC7218M



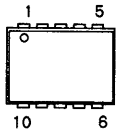
(TOP VIEW)

LA1851NM
LA6525M

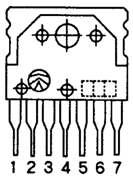


(TOP VIEW)

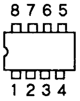
LA5601



LA5667

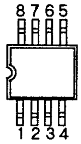


LB1639
M5218AP-22
X24C01P



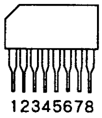
(TOP VIEW)

M5218AFP
RC4558PS

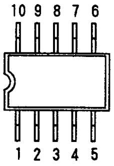


(TOP VIEW)

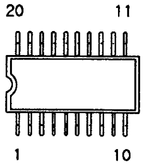
M5230L-A



M54641FP

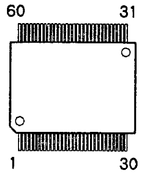

10 9 8 7 6
1 2 3 4 5

PCM67U

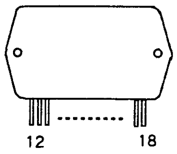


(TOP VIEW)

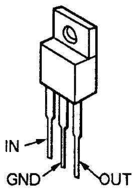
SN755703



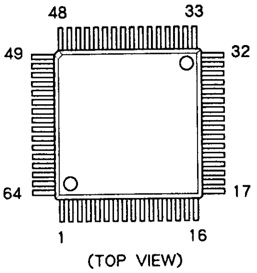
STK4132MK2



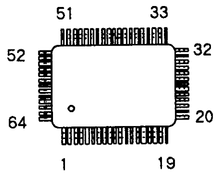
TA7820S



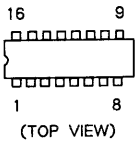
μ PD78012GC-503-AB8


48
33
49
32
64
17
1
16
(TOP VIEW)

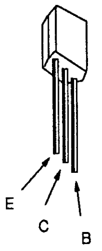
μ PD75116GF-F21-3BE


51
33
52
32
64
20
1
19

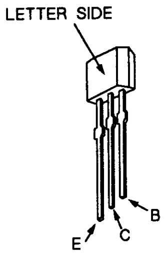
XR1091DCP


16
9
1
8
(TOP VIEW)

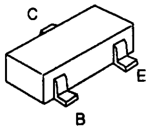
DTC114ES
DTC124ES
DTC144ES
2SC2603-EF



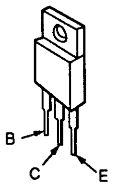
2SA1175-HFE


LETTER SIDE
E
C
B

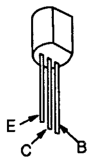
2SA1342
2SA1602
2SA1678
2SC2814-F4
2SC3395
2SC3396
2SC4154-F
2SC4398
2SC4666B



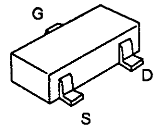
2SB1094-LK
2SD2012



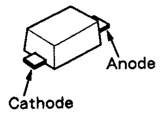
2SB1116A-L
2SD1616A-K



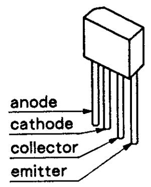
2SK208GR3



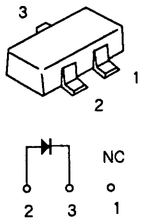
MA8039
MA8056


Anode
Cathode

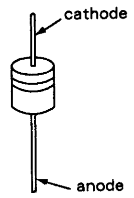
RBA-402


anode
cathode
collector
emitter

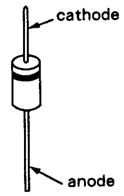
RD5.6M-B2



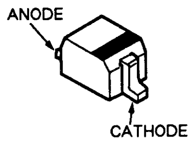
UZL-33H
UZL-6M2
11ES2


cathode
anode

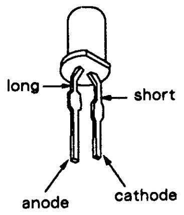
1N4148M


cathode
anode

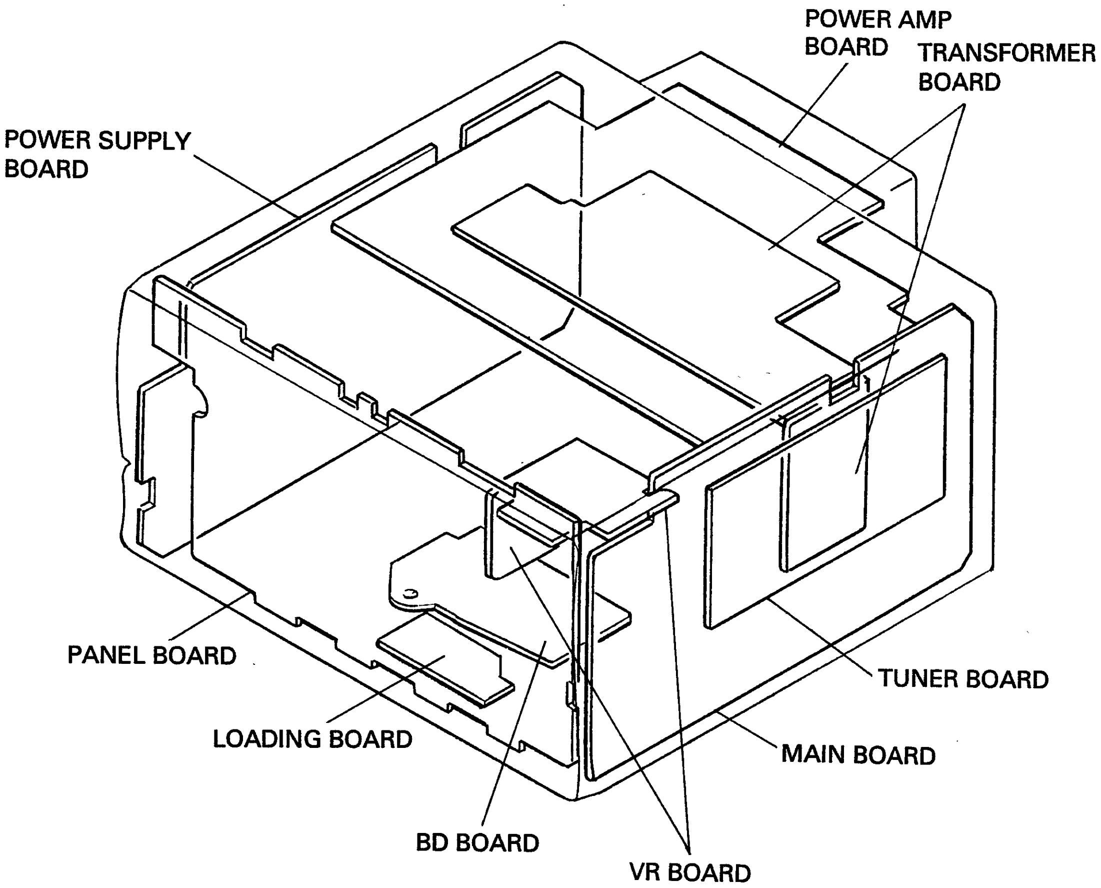
1SS355


ANODE
CATHODE

SEL2210S-CD


long
short
anode
cathode

5-2. CIRCUIT BOARDS LOCATION


POWER AMP BOARD
TRANSFORMER BOARD
POWER SUPPLY BOARD
PANEL BOARD
LOADING BOARD
BD BOARD
VR BOARD
TUNER BOARD
MAIN BOARD

5-3. BLOCK DIAGRAM

OPTICAL PICK-UP BLOCK(KSS-240A)
DETECTOR
RF AMP
FOCUS ERROR AMP
TRACKING ERROR AMP
LASER DIODE
AUTOMATIC POWER CONTROL
RV102 FOCUS GAIN
RV101 TRACKING GAIN
FOCUS/TRACKING SERVO, EFM COMPARATOR IC101(1/2)
DIGITAL SIGNAL PROCESSOR, CLV SERVO IC201
CDM13BC-5BD4A, BU-5BD4A USED TYPE
CDM13BC-5BD4, BU-5BD4 USED TYPE
X201 16MHz
DIGITAL FILTER IC202
D/A CONVERTER IC301
LINE AMP IC302
TRACKING COIL DRIVE
FOCUS COIL DRIVE
IC102(1/2)
FOCUS/TRACKING COIL DRIVE
2-AXIS DEVICE
DEFECT SWITCH Q101
SLED MOTOR DRIVE
SPINDLE MOTOR DRIVE
IC102(2/2) SLED/SPINDLE MOTOR DRIVE
SLED SERVO IC101(2/2)
S101 LIMIT SWITCH
M102 SLED MOTOR
M101 SPINDLE MOTOR
S291 LOAD OUT
S292 LOAD IN
Q1,Q2 LOADING MOTOR DRIVE IC103
M291 LOADING MOTOR
X202 4MHz
AUDIO BUS BUFFER Q201
AUS,E,EA MODEL
FM 75Ω COAXIAL
FE1 FM FRONT-END
FM B+ SWITCH Q3
FM IF AMP Q1
FM IF AMP, DET, MPX, AM RF AMP, MIX, IF AMP DET IC51
LPF Q51
LPF Q52
MW B+ SWITCH Q5
FE2 MW FRONT-END
LPF Q22,23
AM IF IFT52
MUTE SWITCH Q33
REG. Q21
PLL IC21
X21 7.2MHz
T1 SW ANT
T2 SW OSC
SW OSC SWITCH Q4
Q6 MW/SW SWITCHING
Q7 MW/SW SWITCHING
E,EA MODEL
J401 MIX MIC
MIC AMP IC401(1/2)
RV401 MIC LEVEL
MIC AMP IC401(2/2)
FUNCTION SWITCH IC120(1/2)
J100-5 DAT IN L
J100-6 DAT IN R
J100-1 VIDEO/AUX L
J100-2 VIDEO/AUX R
CN605(1/4) SYSTEM CONTROL
PB (L)
PB (R)
J100-1 PHONO L
J100-2 PHONO R
EQ AMP IC110
Q120 FUNCTION SWITCH CONTROL
FUNCTION SWITCH IC121
Q121 FUNCTION SWITCH CONTROL
MIX AMP IC190(1/2)
BUFFER IC190(2/2)
SWITCHING IC191
GRAPHIC EQUALIZER (ELECTRICAL VOLUME) IC130(1/2)
GRAPHIC EQUALIZER (ELECTRICAL VOLUME) IC130(2/2)
CN605(2/4) SYSTEM CONTROL
REC (L)
REC (R)
FUNCTION SWITCH IC120(2/2)
J100-3 DAT OUT L
J100-4 DAT OUT R
MUTING Q601
MUTING Q651
POWER AMP IC601(1/2)
POWER AMP IC601(2/2)
POWER ON/OFF MUTE Q624
J601 HEADPHONES
T8601 SPEAKER IMPEDANCE USE 6-16Ω
EXCEPT AEP,G,EE MODEL
J602-1,-2 SURROUND SPEAKER OUT
J602-3 SUPER WOOFER
MUTE SWITCH Q602
(D362,M361: Included in RV361)
LED DRIVE IC309
M361
MOTOR DRIVE (VOLUME) IC310
RV361 VOLUME
D362
D331-337
MEMORY IC302
S330-356
(S350: E,EA,EE MODEL ONLY)
BAND-PASS FILTER (SPECTRUM ANALYZER) IC305
SWITCHING IC306
CN605(3/4) SYSTEM CONTROL
AUDIO BUS BUFFER Q301
MAIN SYSTEM CONTROL IC301
DISPLAY CONTROL IC307
DISPLAY CONTROL IC308
FLUORESCENT INDICATOR TUBE FL301
INVERTER IC304(1/2)
REMOTE CONTROL RECEIVER IC303
X302 8.388MHz
X301 32.768kHz
BUFFER Q390
SHUMIT TRIGER IC304(2/2)
AEP,UK,G,EE MODEL
G MODEL
FL51
FM 75Ω COAXIAL
FE1 FM FRONT-END
FM B+ SWITCH Q3
FM IF AMP Q1
FM IF AMP Q2
AEP,UK,EE MODEL
FM IF AMP, DET, MPX, AM RF AMP, MIX, IF AMP, DET IC51
LPF Q51
LPF Q52
FE3 LW FRONT-END
LW B+ SWITCH Q6
AM IF IFT52
MUTE SWITCH Q53
REG. Q21
LPF Q24,25
FE2 MW FRONT-END
MW B+ SWITCH Q4
PLL IC21
LPF Q22,23
X21 7.2MHz
Q5,7 MW/LW SWITCHING
IC301 - 304, IC307 - 309 B+
TUNER SECTION B+
B+ SWITCHING (TUNER SECTION) Q921
REG. IC901
REG. IC904
RECT D900
IC601 B+
IC307,308 B+
REG. Q920
RECT D923
SWITCHING Q931,932
T901 POWER TRANSFORMER
CD SECTION B+
REG, RESET IC903
IC120,121,130 IC190,191,305 IC306,401 CD SECTION B+
REG. Q916
IC130,310 LED CIRCUIT B+
REG. Q903,906
RECT D901-904
IC120,121,130, IC190,191,305, IC306,401 B-
REG. Q904
E,EA MODEL
VOLTAGE SELECTOR S901
EXCEPT E,EA MODEL
CN905 ~AC IN
REG. CONTROL IC902
CN605(4/4) SYSTEM CONTROL
POWER ON/OFF SWITCH Q905
TO FL301

5-4. PRINTED WIRING BOARDS
(DISPLAY SECTION)

• See page 16 for semiconductor lead layouts, 18 for circuit boards location.

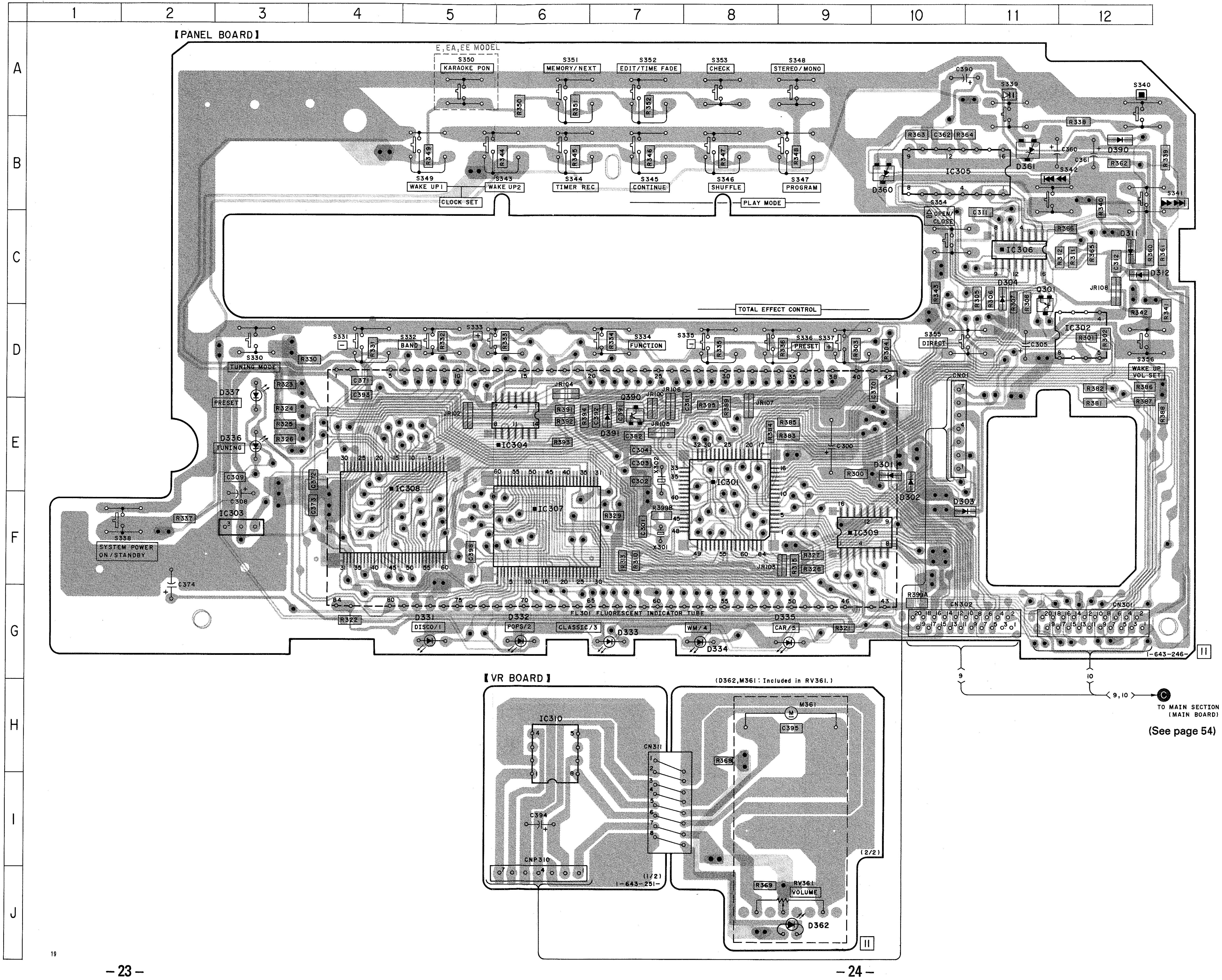
● SEMICONDUCTOR LOCATION

Ref. No.	Location
D301	E-10
D302	E-10
D303	F-11
D304	C-11
D311	C-12
D312	C-12
D331	G-5
D332	G-6
D333	G-7
D334	G-8
D335	G-9
D336	E-3
D337	D-3
D360	B-10
D361	B-11
D362	J-9
D390	B-12
D391	E-7
IC301	E-8
IC302	D-12
IC303	F-3
IC304	E-6
IC305	B-10
IC306	C-11
IC307	F-6
IC308	E-5
IC309	F-9
IC310	H-6
Q301	C-11
Q390	E-7

Notes on printed wiring boards:

- ○—— : Indicated a lead wire mounted on the component side
- ■ : Parts mounted on the conductor side
- ● : Through hole
- ▨ : Pattern from the side which enables seeing
- ▨ : Pattern of the rear side

- G : Germany Model
- AUS : Australian Model
- EA : Saudi Arabia Model
- EE : East European Model

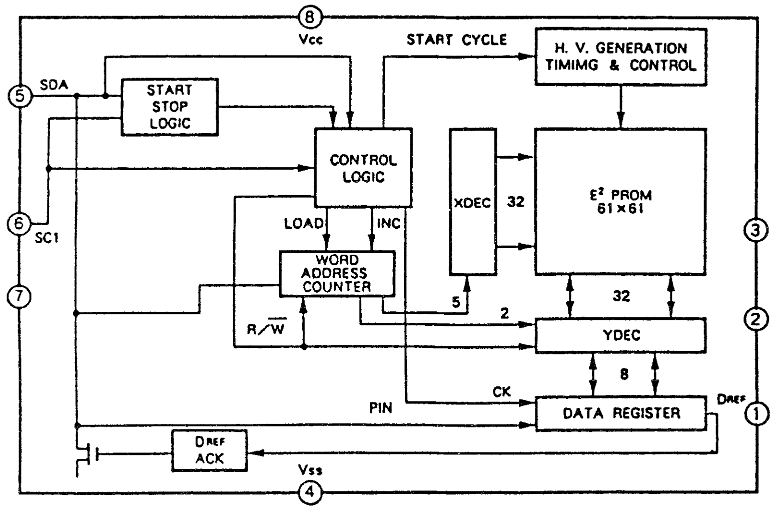


1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H I J
【PANEL BOARD】
E,EA,EE MODEL
S350 KARAOKE PON
S351 MEMORY/NEXT
S352 EDIT/TIME FADE
S353 CHECK
S348 STEREO/MONO
S349 WAKE UP1
S343 WAKE UP2
CLOCK SET
S344 TIMER REC
S345 CONTINUE
S346 SHUFFLE
S347 PROGRAM
PLAY MODE
S354 OPEN/CLOSE
TOTAL EFFECT CONTROL
S330 TUNING MODE
S331
S332 BAND
S333
S334 FUNCTION
S335
S336 PRESET
S337
S355 DIRECT
S356 WAKE UP VOL SET
D337 PRESET
D336 TUNING
S338 SYSTEM POWER ON/STANDBY
IC301
IC302
IC303
IC304
IC305
IC306
IC307
IC308
IC309
FL301 FLUORESCENT INDICATOR TUBE
D331 DISCO/1
D332 POPS/2
CLASSIC/3
D333
WM/4
D334
D335 CAR/5
CN301
CN302
1-643-246-
11
【VR BOARD】
(D362,M361: Included in RV361.)
IC310
CN311
CNP310
C394
M361
C395
R368
R369
RV361 VOLUME
D362
(1/2)
(2/2)
1-643-251-
9
10
9,10
C
TO MAIN SECTION (MAIN BOARD)

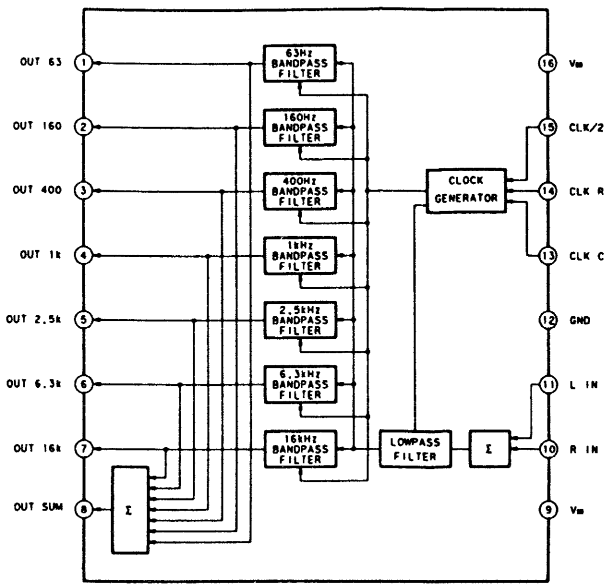
(See page 54)

● IC BLOCK DIAGRAMS (DISPLAY SECTION)

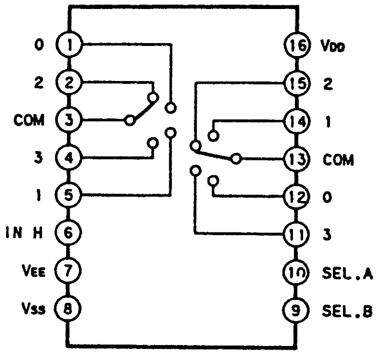
IC302 X24C01P


⑧
Vcc
START CYCLE
H. V. GENERATION
TIMIMG & CONTROL
⑤ SDA
START
STOP
LOGIC
CONTROL
LOGIC
XDEC
32
E² PROM
61×61
⑥ SC1
LOAD
INC
WORD
ADDRESS
COUNTER
③
⑦
5
2
32
R/W
YDEC
②
8
CK
PIN
DATA REGISTER
Dref
①
Dref
ACK
Vss
④

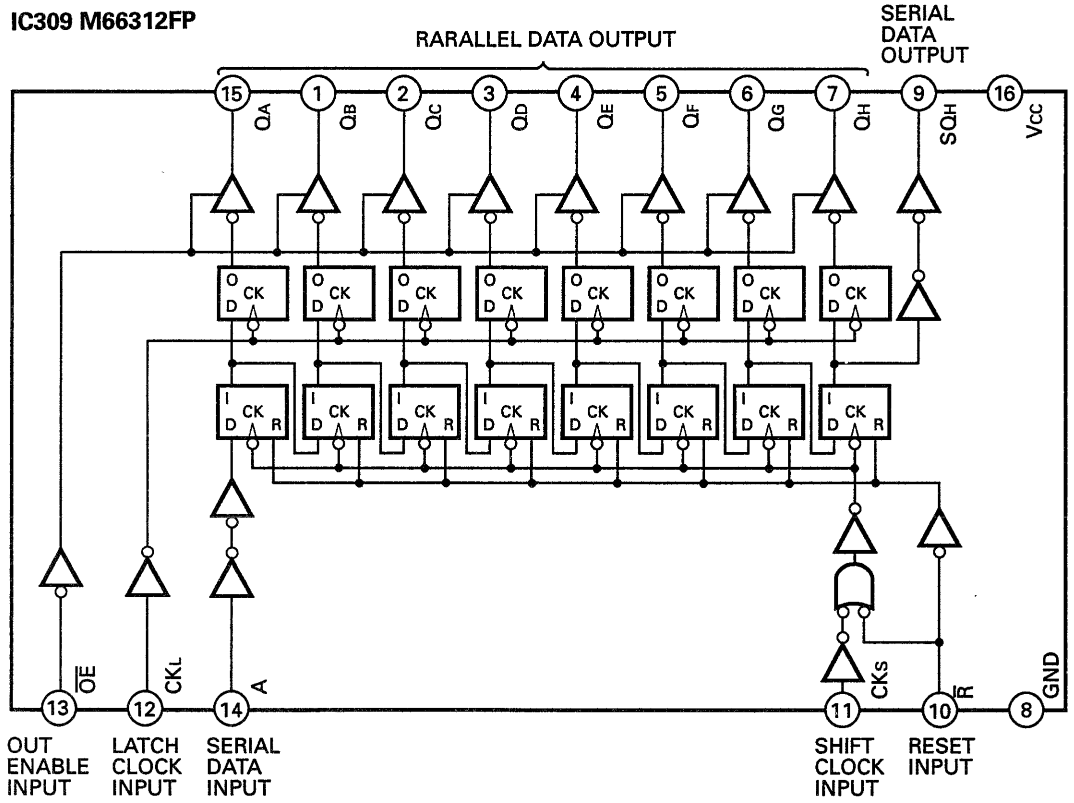
IC305 XR1091DCP


OUT 63 ①
OUT 160 ②
OUT 400 ③
OUT 1k ④
OUT 2.5k ⑤
OUT 6.3k ⑥
OUT 16k ⑦
OUT SUM ⑧
63Hz BANDPASS FILTER
160Hz BANDPASS FILTER
400Hz BANDPASS FILTER
1kHz BANDPASS FILTER
2.5kHz BANDPASS FILTER
6.3kHz BANDPASS FILTER
16kHz BANDPASS FILTER
Σ
CLOCK GENERATOR
LOWPASS FILTER
Σ
⑯ Vdd
⑮ CLK/2
⑭ CLK R
⑬ CLK C
⑫ GND
⑪ L IN
⑩ R IN
⑨ Vss

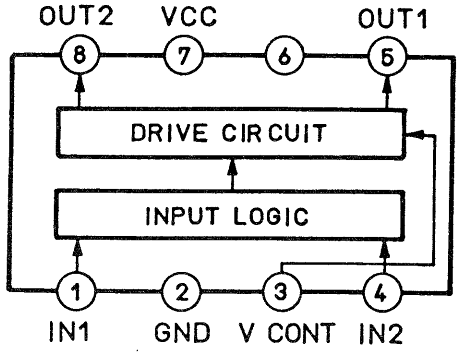
IC306 CD4052BCM


0 ①
2 ②
COM ③
3 ④
1 ⑤
IN H ⑥
VEE ⑦
Vss ⑧
⑯ VDD
⑮ 2
⑭ 1
⑬ COM
⑫ 0
⑪ 3
⑩ SEL.A
⑨ SEL.B

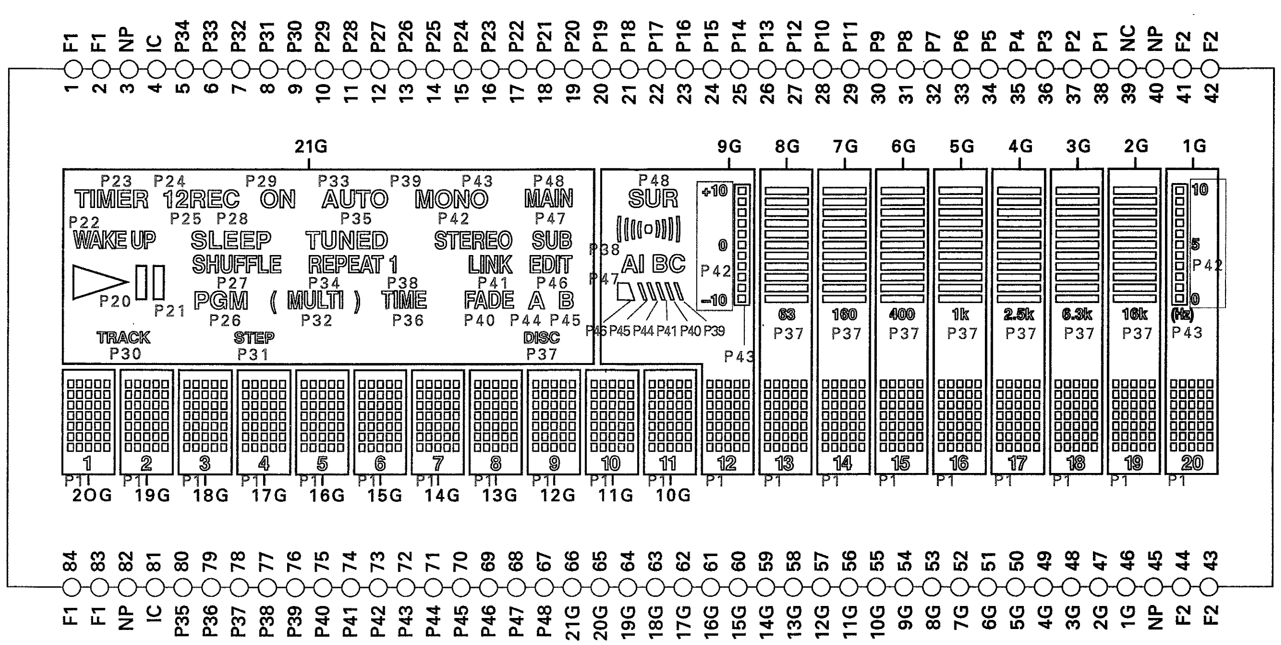
IC309 M66312FP

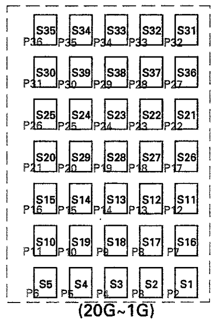

RARALLEL DATA OUTPUT
SERIAL DATA OUTPUT
⑮ QA
① QB
② QC
③ QD
④ QE
⑤ QF
⑥ QG
⑦ QH
⑨ SQH
⑯ Vcc
Q D CK
I D CK R
⑬ OE
⑫ CKL
⑭ A
⑪ CKs
⑩ R
⑧ GND
OUT ENABLE INPUT
LATCH CLOCK INPUT
SERIAL DATA INPUT
SHIFT CLOCK INPUT
RESET INPUT

IC310 LB1639

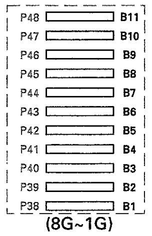

OUT2
VCC
OUT1
⑧
⑦
⑥
⑤
DRIVE CIRCUIT
INPUT LOGIC
①
②
③
④
IN1
GND
V CONT
IN2

● FLUORESCENT INDICATOR TUBE (FL301)


F1 F1 NP IC P34 P33 P32 P31 P30 P29 P28 P27 P26 P25 P24 P23 P22 P21 P20 P19 P18 P17 P16 P15 P14 P13 P12 P10 P11 P9 P8 P7 P6 P5 P4 P3 P2 P1 NC NP F2 F2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42
21G
9G 8G 7G 6G 5G 4G 3G 2G 1G
P23 P24 P29 P33 P39 P43 P48
TIMER 12REC ON AUTO MONO MAIN
P22 P25 P28 P35 P42 P47
WAKE UP SLEEP TUNED STEREO SUB
SHUFFLE REPEAT 1 LINK EDIT
P27 P34 P38 P41 P46
P20 P21 PGM (MULTI) TIME FADE A B
P26 P32 P36 P40 P44 P45
TRACK STEP DISC
P30 P31 P37
P48
SUR
P38
AI BC
P47
P46 P45 P44 P41 P40 P39
+10
0
−10
P42
P43
63 160 400 1k 2.5k 6.3k 16k (Hz)
P37 P37 P37 P37 P37 P37 P37 P43
10
5
0
P42
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
P11 P1
20G 19G 18G 17G 16G 15G 14G 13G 12G 11G 10G
84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43
F1 F1 NP IC P35 P36 P37 P38 P39 P40 P41 P42 P43 P44 P45 P46 P47 P48 21G 20G 19G 18G 17G 16G 15G 14G 13G 12G 11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G NP F2 F2


S35 S34 S33 S32 S31
P36 P35 P34 P33 P32
S30 S39 S38 S37 S36
P31 P30 P29 P28 P27
S25 S24 S23 S22 S21
P26 P25 P24 P23 P22
S20 S29 S28 S27 S26
P21 P20 P19 P18 P17
S15 S14 S13 S12 S11
P16 P15 P14 P13 P12
S10 S19 S18 S17 S16
P11 P10 P9 P8 P7
S5 S4 S3 S2 S1
P6 P5 P4 P3 P2

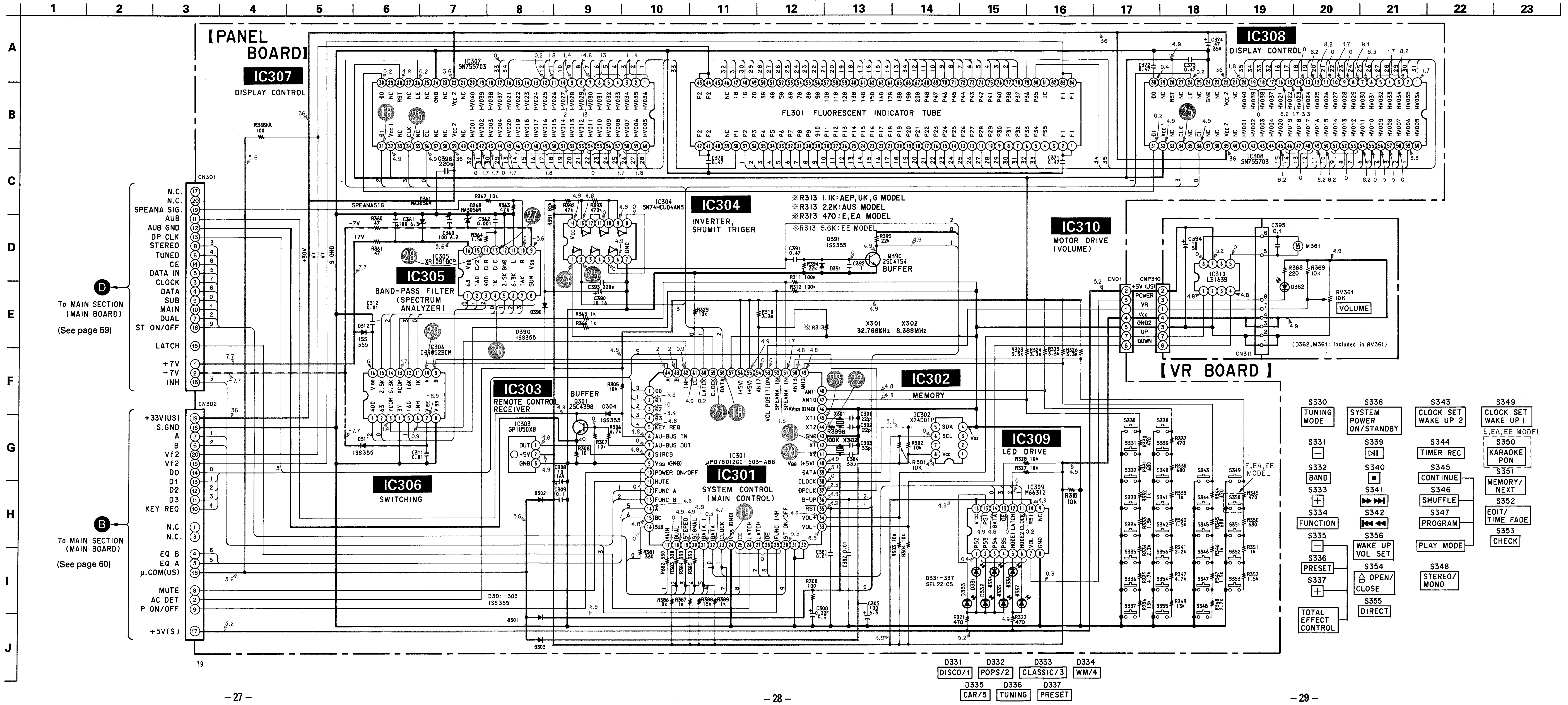
(20G~1G)


P48 B11
P47 B10
P46 B9
P45 B8
P44 B7
P43 B6
P42 B5
P41 B4
P40 B3
P39 B2
P38 B1

(8G~1G)

5-5. SCHEMATIC DIAGRAM (DISPLAY SECTION)

• See page 69 for IC (IC301) pin functions, 71 for waveforms.



【PANEL BOARD】
IC307
DISPLAY CONTROL
IC307 SN755703
FL301 FLUORESCENT INDICATOR TUBE
IC308
DISPLAY CONTROL
IC308 SN755703
CN301
N.C.
N.C.
SPEANA SIG.
AUB
AUB GND
DP CLK
STEREO
TUNED
CE
DATA IN
CLOCK
DATA
SUB
MAIN
DUAL
ST ON/OFF
LATCH
+7V
-7V
INH
To MAIN SECTION (MAIN BOARD) (See page 59)
CN302
+33V(US)
S.GND
A
B
Vf2
Vf2
D0
D1
D2
D3
KEY REQ
N.C.
N.C.
EQ B
EQ A
μ.COM(US)
MUTE
AC DET
P ON/OFF
+5V(S)
To MAIN SECTION (MAIN BOARD) (See page 60)
IC304
INVERTER, SHUMIT TRIGER
IC304 SN74HCU04ANS
IC305
BAND-PASS FILTER (SPECTRUM ANALYZER)
IC305 XR10910CP
IC306
SWITCHING
IC306 CD4052BCM
IC303
REMOTE CONTROL RECEIVER
IC303 GP1U50XB
BUFFER Q301 2SC4398
IC301
SYSTEM CONTROL (MAIN CONTROL)
IC301 μPD78012GC-503-AB8
IC302
MEMORY
IC302 X24C01P
IC309
LED DRIVE
IC309 M66312
※R313 1.1K: AEP,UK,G MODEL
※R313 2.2K: AUS MODEL
※R313 470: E,EA MODEL
※R313 5.6K: EE MODEL
Q390 2SC4154 BUFFER
X301 32.768KHz
X302 8.388MHz
IC310
MOTOR DRIVE (VOLUME)
IC310 LB1639
CN01
CNP310
CN311
M361
RV361 10K VOLUME
(D362, M361: Included in RV361)
【VR BOARD】
D331-337 SEL2210S
D331 DISCO/1
D332 POPS/2
D333 CLASSIC/3
D334 WM/4
D335 CAR/5
D336 TUNING
D337 PRESET
S330 TUNING MODE
S331 −
S332 BAND
S333 +
S334 FUNCTION
S335 −
S336 PRESET
S337 +
TOTAL EFFECT CONTROL
S338 SYSTEM POWER ON/STANDBY
S339 ▷II
S340 ■
S341 ▶▶ ▶▶I
S342 I◀◀ ◀◀
S356 WAKE UP VOL SET
S354 ≜ OPEN/CLOSE
S355 DIRECT
S343 CLOCK SET WAKE UP 2
S344 TIMER REC
S345 CONTINUE
S346 SHUFFLE
S347 PROGRAM
PLAY MODE
S348 STEREO/MONO
S349 CLOCK SET WAKE UP 1
E,EA,EE MODEL
S350 KARAOKE PON
S351 MEMORY/NEXT
S352 EDIT/TIME FADE
S353 CHECK

Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.

- ▬▬▬ : B+ Line
- ▪▪▪▪ : B− Line
- ☐ : Adjustment for repair
- Voltage are dc with respect to ground under no -signal conditions.
- No mark : STOP
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.

- **G : Germany Model**
- **AUS : Australian Model**
- **EA : Saudi Arabia Model**
- EE : East European Model

5-6. PRINTED WIRING BOARDS
(POWER AMP / POWER SUPPLY SECTION)

- See page 16 for semiconductor lead layouts, 18 for circuit boards location.

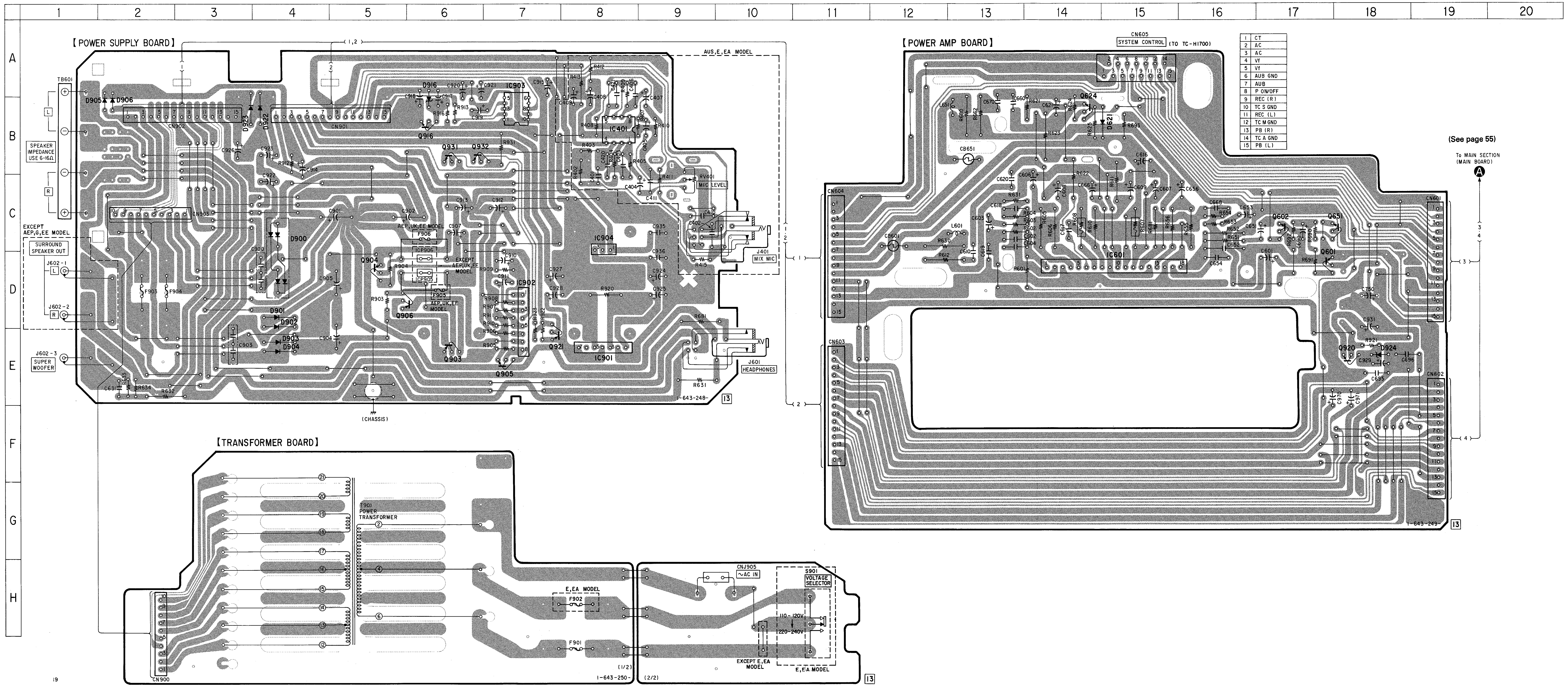
● SEMICONDUCTOR LOCATION

Ref. No.	Location
D621	B-15
D900	C-4
D901	D-4
D902	D-4
D903	E-4
D904	E-4
D905	B-1
D906	B-2
D916	A-6
D922	B-4
D923	B-3
D924	E-18
IC401	B-8
IC601	D-15
IC901	E-8
IC902	D-7
IC903	A-7
IC904	C-8
Q601	D-17
Q602	C-17
Q624	B-14
Q651	C-18
Q903	E-6
Q904	D-5
Q905	E-7
Q906	D-6
Q916	B-6
Q920	E-18
Q921	E-7
Q931	B-6
Q932	B-6

Notes on printed wiring boards:

- •o——— : Indicated a lead wire mounted on the component side
- ▨ : Pattern from the side which enables seeing

- G : Germany Model
- AUS : Australian Model
- EA : Saudi Arabia Model
- EE : East European Model

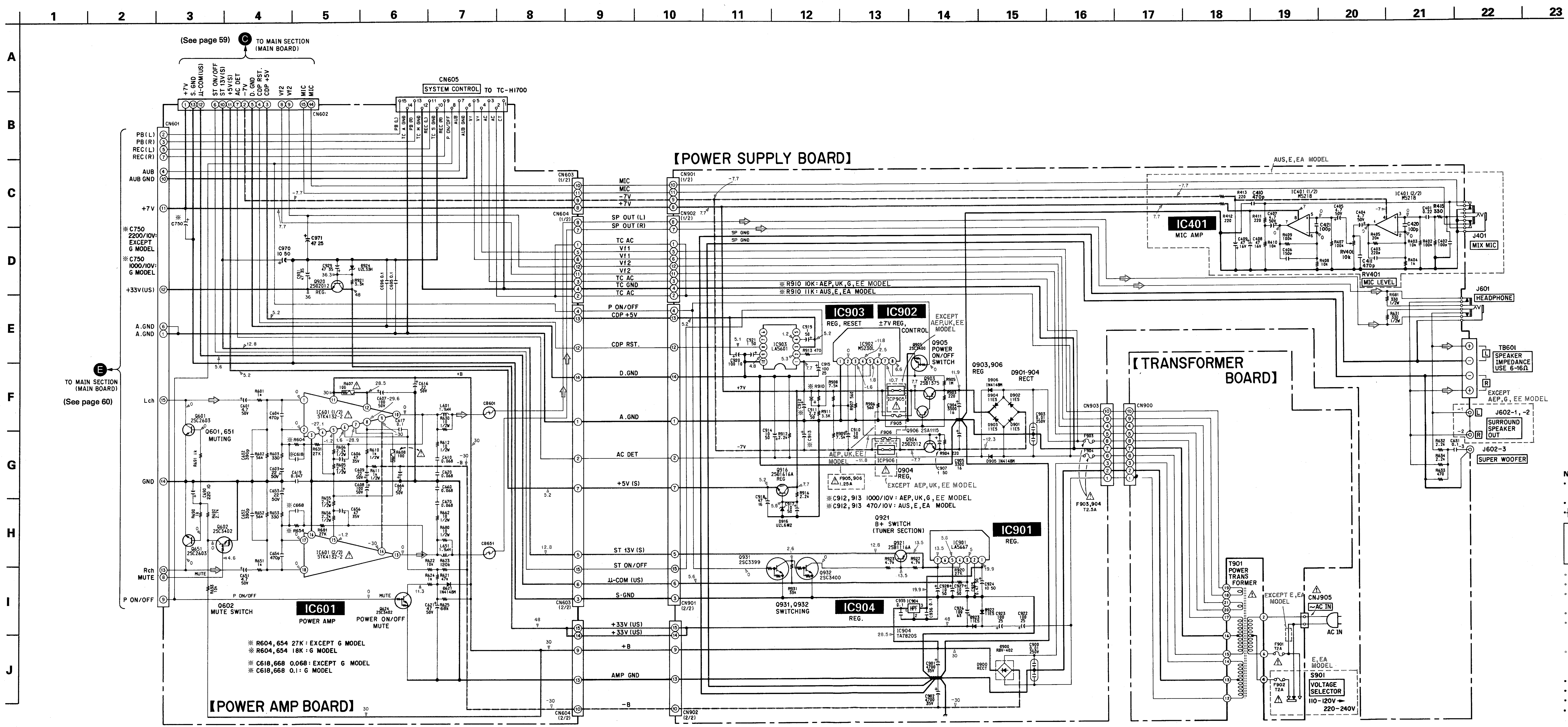

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
【POWER SUPPLY BOARD】
AUS,E,EA MODEL
TB601
L
R
SPEAKER IMPEDANCE USE 6-16Ω
EXCEPT AEP,G,EE MODEL
SURROUND SPEAKER OUT
J602-1
J602-2
J602-3
SUPER WOOFER
CN902
CN901
CN903
D905
D906
D922
D923
D900
D901
D902
D903
D904
D916
Q916
Q931
Q932
IC903
IC401
IC904
IC902
IC901
Q904
Q905
Q906
Q903
Q921
EXCEPT AEP,UK,EE MODEL
AEP,UK,EE MODEL
RV401 MIC LEVEL
J401 MIX MIC
J601 HEADPHONES
(CHASSIS)
1-643-248-
13
【TRANSFORMER BOARD】
T901 POWER TRANSFORMER
E,EA MODEL
F902
F901
CN900
(1/2)
1-643-250-
(2/2)
CNJ905 ~AC IN
S901 VOLTAGE SELECTOR
110-120V
220-240V
EXCEPT E,EA MODEL
E,EA MODEL
13
【POWER AMP BOARD】
CN605
SYSTEM CONTROL
(TO TC-H1700)
CN604
CN603
CN601
CN602
IC601
Q624
D621
Q602
Q651
Q601
Q920
D924
1-643-249-
13
(See page 55)
To MAIN SECTION (MAIN BOARD)
A

1	CT
2	AC
3	AC
4	Vf
5	Vf
6	AUB GND
7	AUB
8	P ON/OFF
9	REC (R)
10	TC S GND
11	REC (L)
12	TC M GND
13	PB (R)
14	TC A GND
15	PB (L)

5-7. SCHEMATIC DIAGRAM

(POWER AMP / POWER SUPPLY SECTION)

- See page 39 for IC block diagrams.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
A B C D E F G H I J
(See page 59) C TO MAIN SECTION (MAIN BOARD)
CN605 SYSTEM CONTROL TO TC-H1700
CN601
CN602
PB(L)
PB(R)
REC(L)
REC(R)
AUB
AUB GND
+7V
+33V(US)
A.GND
A.GND
Lch
GND
Rch
MUTE
P ON/OFF
E TO MAIN SECTION (MAIN BOARD) (See page 60)
※C750 2200/10V: EXCEPT G MODEL
※C750 1000/10V: G MODEL
【POWER SUPPLY BOARD】
CN603 (1/2)
CN604 (1/2)
CN901 (1/2)
CN902 (1/2)
MIC
MIC
-7V
+7V
SP OUT (L)
SP OUT (R)
TC AC
Vf1
Vf1
Vf2
Vf2
TC AC
TC GND
TC AC
P ON/OFF
CDP +5V
CDP RST.
D.GND
A.GND
AC DET
+5V (S)
ST 13V (S)
ST ON/OFF
μ-COM (US)
S-GND
+33V (US)
+33V (US)
+B
AMP GND
-B
CN603 (2/2)
CN604 (2/2)
CN901 (2/2)
CN902 (2/2)
※R910 10K: AEP,UK,G,EE MODEL
※R910 11K: AUS,E,EA MODEL
IC903 REG, RESET
IC902 ±7V REG, CONTROL
EXCEPT AEP,UK,EE MODEL
Q905 POWER ON/OFF SWITCH
Q903,906 REG
D901-904 RECT
AEP,UK,EE MODEL
EXCEPT AEP,UK,EE MODEL
Q904 REG.
※C912,913 1000/10V: AEP,UK,G,EE MODEL
※C912,913 470/10V: AUS,E,EA MODEL
Q921 B+ SWITCH (TUNER SECTION)
IC901 REG.
Q931,Q932 SWITCHING
IC904 REG.
F903,904 T2.5A
AUS,E,EA MODEL
IC401 MIC AMP
J401 MIX MIC
RV401 MIC LEVEL
J601 HEADPHONE
TB601 SPEAKER IMPEDANCE USE 6-16Ω
EXCEPT AEP,G,EE MODEL
J602-1, -2 SURROUND SPEAKER OUT
J602-3 SUPER WOOFER
【TRANSFORMER BOARD】
CN903
CN900
T901 POWER TRANS FORMER
EXCEPT E,EA MODEL
CNJ905 AC IN
AC IN
E,EA MODEL
S901 VOLTAGE SELECTOR 110-120V 220-240V
IC601 POWER AMP
Q601,651 MUTING
Q602 MUTE SWITCH
Q603 POWER ON/OFF MUTE
※R604,654 27K: EXCEPT G MODEL
※R604,654 18K: G MODEL
※C618,668 0.068: EXCEPT G MODEL
※C618,668 0.1: G MODEL
【POWER AMP BOARD】

Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- : Fuse resistor

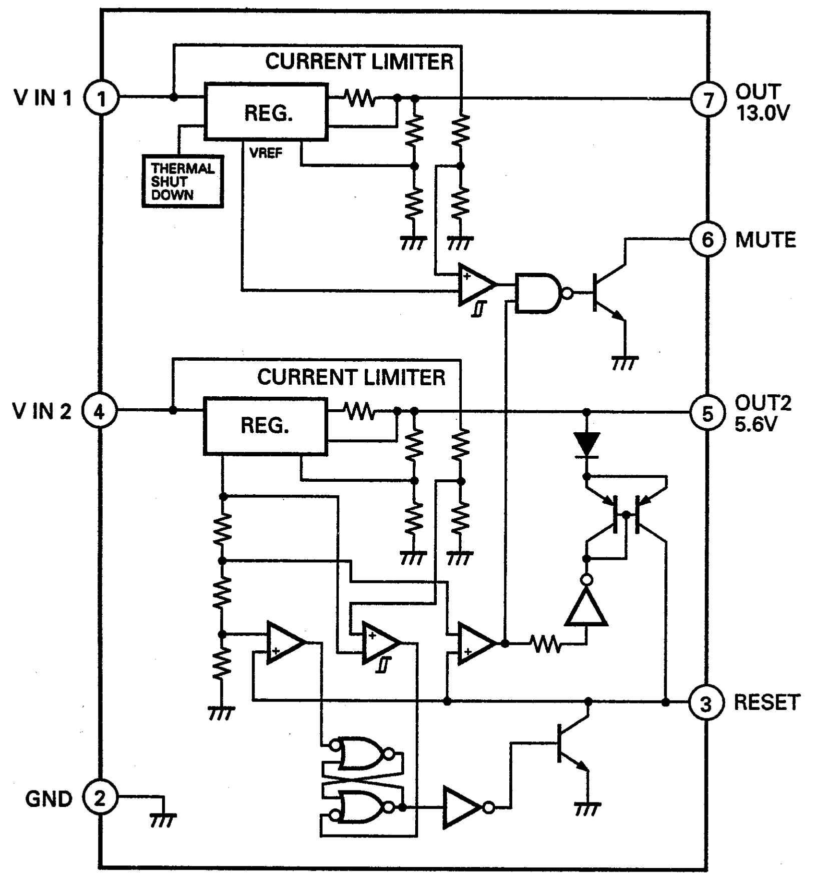
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬▬▬ : B+ Line
- ▬ ▬ ▬ ▬ : B− Line
- Voltage are dc with respect to ground under no -signal conditions.
- No mark : STOP
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path
  ⇨ : CD

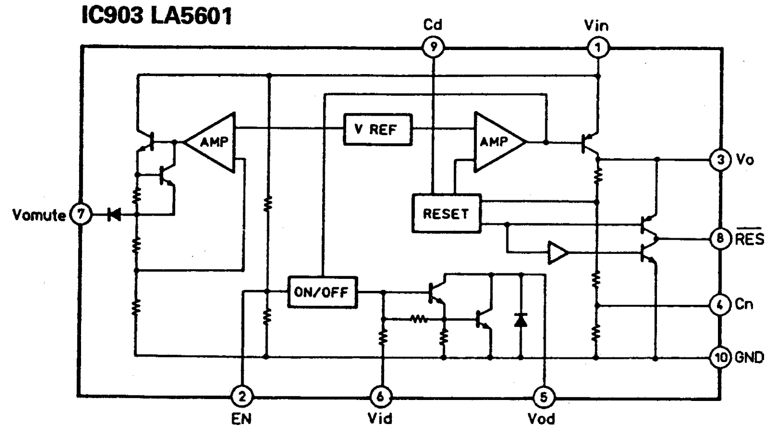
- G : Germany Model
- AUS : Australian Model
- EA : Saudi Arabia Model
- EE : East European Model

● IC BLOCK DIAGRAMS (POWER AMP / POWER SUPPLY SECTION)

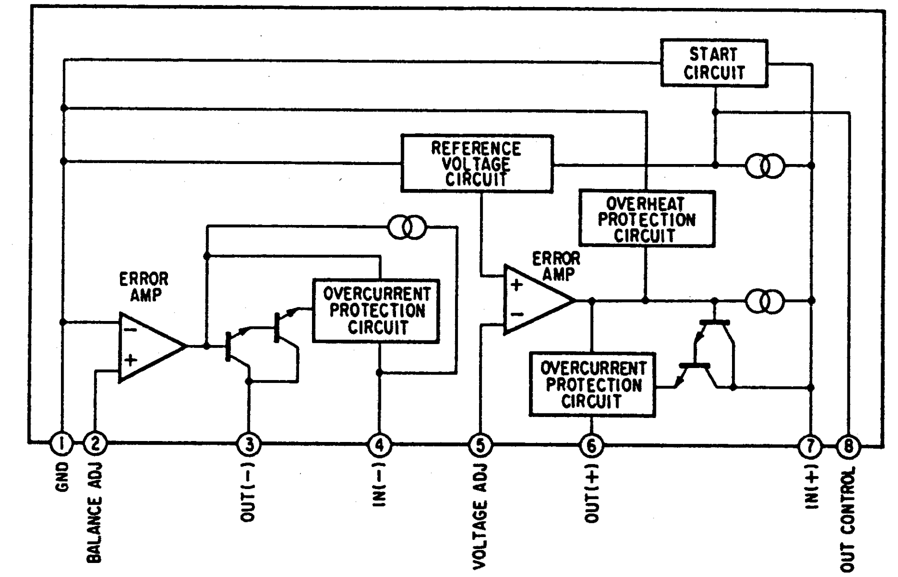
IC901 LA5667


CURRENT LIMITER
REG.
THERMAL SHUT DOWN
VREF
V IN 1 ①
⑦ OUT 13.0V
⑥ MUTE
CURRENT LIMITER
REG.
V IN 2 ④
⑤ OUT2 5.6V
③ RESET
GND ②

IC903 LA5601


Cd ⑨
Vin ①
AMP
V REF
AMP
RESET
ON/OFF
Vomute ⑦
③ Vo
⑧ $\overline{\text{RES}}$
④ Cn
⑩ GND
② EN
⑥ Vid
⑤ Vod

IC902 M5230L


START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
① GND
② BALANCE ADJ
③ OUT(−)
④ IN(−)
⑤ VOLTAGE ADJ
⑥ OUT(+)
⑦ IN(+)
⑧ OUT CONTROL

5-8. PRINTED WIRING BOARDS (CD SECTION)

(CD MECHANISM : CDM13BC-5BD4 USED
BASE UNIT : BU-5BD4 USED)

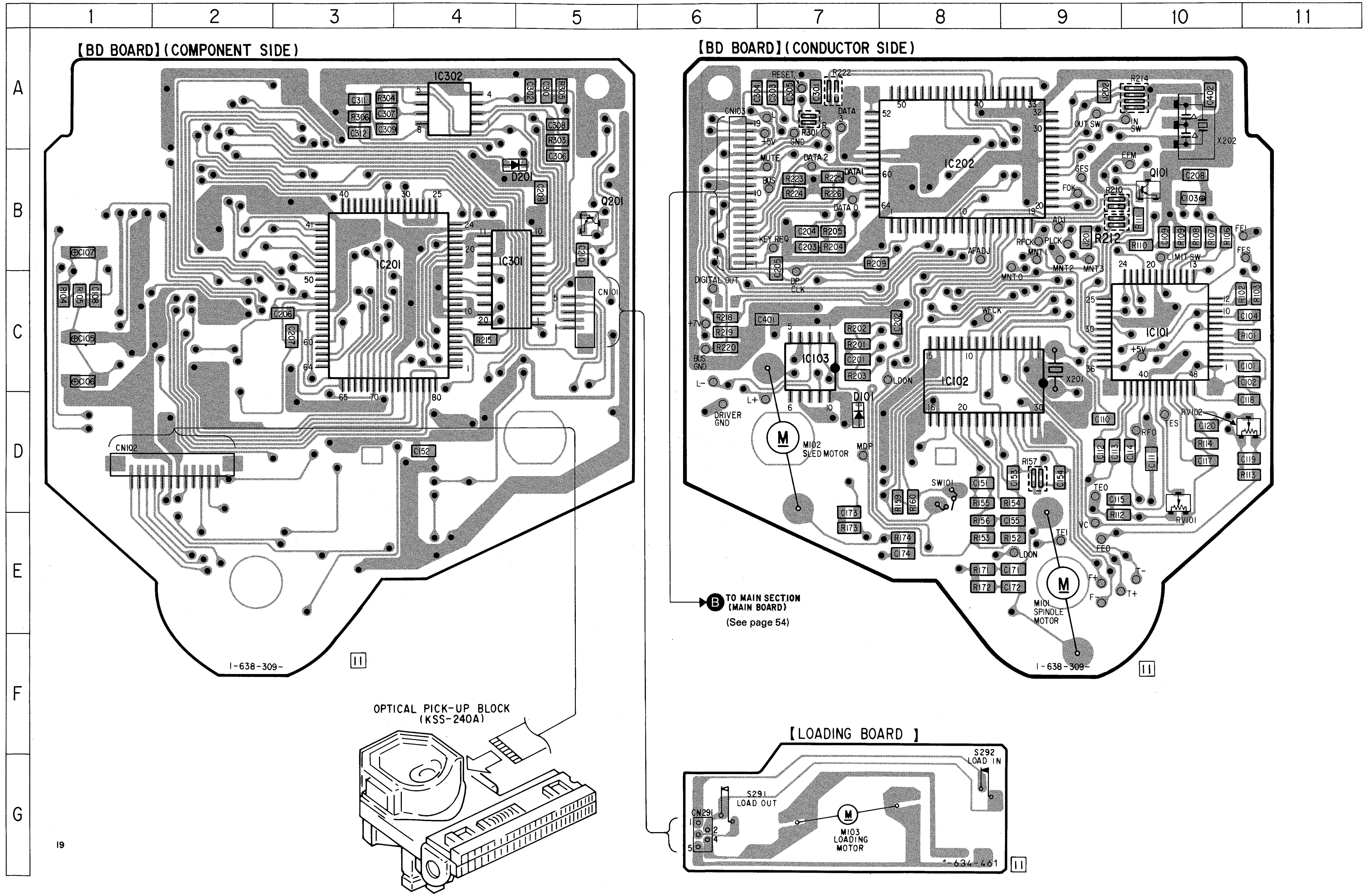
- See page 16 for semiconductor lead layouts, 18 for circuit boards location.

● SEMICONDUCTOR LOCATION

Ref. No.	Location
D101	D-7
D201	B-5
IC101	C-10
IC102	C-8
IC103	C-7
IC201	B-3
IC202	B-8
IC301	B-4
IC302	A-4
Q101	B-10
Q201	B-5

Notes on printed wiring boards:

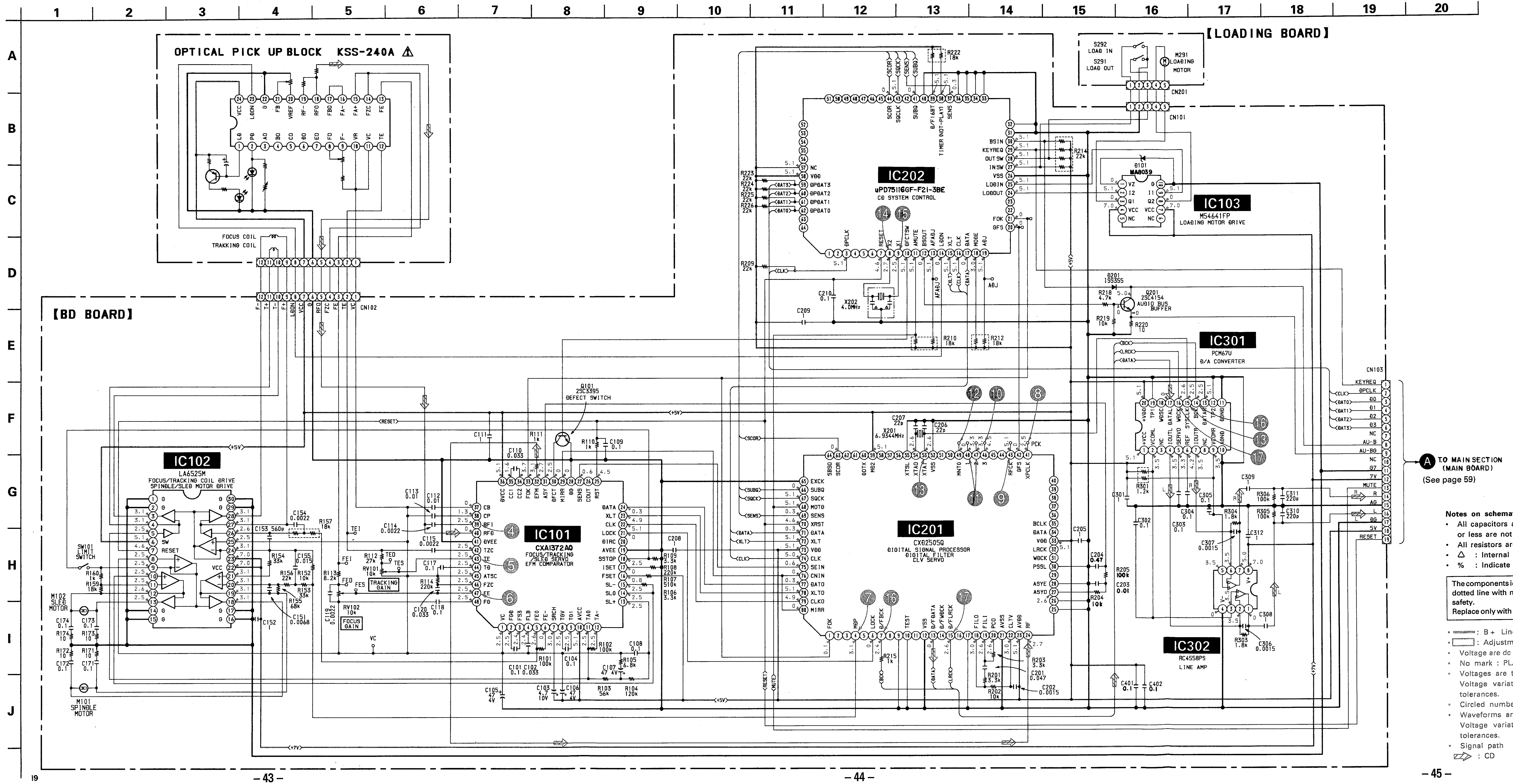
- o——— : Indicated a lead wire mounted on the component side
- ● : Through hole
- ▨ : Pattern from the side which enables seeing


1 2 3 4 5 6 7 8 9 10 11
A B C D E F G
[BD BOARD] (COMPONENT SIDE)
IC302
IC201
IC301
D201
Q201
CN101
CN102
1-638-309-
11
OPTICAL PICK-UP BLOCK (KSS-240A)
[BD BOARD] (CONDUCTOR SIDE)
IC202
IC103
IC102
IC101
D101
Q101
X201
X202
M102 SLED MOTOR
M101 SPINDLE MOTOR
SW101
RV101
RV102
DIGITAL OUT
DRIVER GND
1-638-309-
11
B TO MAIN SECTION (MAIN BOARD)
(See page 54)
[LOADING BOARD]
S292 LOAD IN
S291 LOAD OUT
CN291
M103 LOADING MOTOR
1-634-461
11

5-9. SCHEMATIC DIAGRAM (CD SECTION)

(CD MECHANISM : CDM13BC-5BD4 USED, BASE UNIT : BU-5BD4 USED)

• See page 51 for IC block diagrams, 68 for IC (IC202) pin functions and 71 for waveforms.


1
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3
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7
8
9
10
11
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
OPTICAL PICK UP BLOCK KSS-240A ⚠
FOCUS COIL
TRAKKING COIL
【BD BOARD】
【LOADING BOARD】
CN102
CN101
CN201
CN103
S292 LOAD IN
S291 LOAD OUT
M291 LOADING MOTOR
IC101
CXA1372AQ
FOCUS/TRACKING /SLED SERVO EFM COMPARATOR
IC102
LA6525M
FOCUS/TRACKING COIL DRIVE SPINDLE/SLED MOTOR DRIVE
IC103
M54641FP
LOADING MOTOR DRIVE
IC201
CXD2505Q
DIGITAL SIGNAL PROCESSOR DIGITAL FILTER CLV SERVO
IC202
uPD75116GF-F21-3BE
CD SYSTEM CONTROL
IC301
PCM67U
D/A CONVERTER
IC302
RC4558PS
LINE AMP
Q101
2SC3395
DEFECT SWITCH
Q201
2SC4154
AUDIO BUS BUFFER
D101
MA8039
D201
1SS355
X201
6.9344MHz
X202
4.0MHz
SW101
LIMIT SWITCH
M102
SLED MOTOR
M101
SPINDLE MOTOR
RV101
TRACKING GAIN
RV102
FOCUS GAIN
TE1
FE1
<+5V>
<+7V>
<RESET>
KEYREQ
DPCLK
D0
D1
D2
D3
NC
AU-B
AU-BG
NC
D7
7V
MUTE
R
AG
L
DG
5V
RESET
A TO MAIN SECTION (MAIN BOARD)
(See page 59)

Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : Internal component
- % : Indicate a permissible margin

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬ : B + Line
- ☐ : Adjustment for repair
- Voltage are dc with respect to ground under no -signal conditions.
- No mark : PLAY
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path
  ⇨ : CD

5-10. PRINTED WIRING BOARDS (CD SECTION)

(CD MECHANISM : CDM13BC-5BD4A USED
BASE UNIT : BU-5BD4A USED)

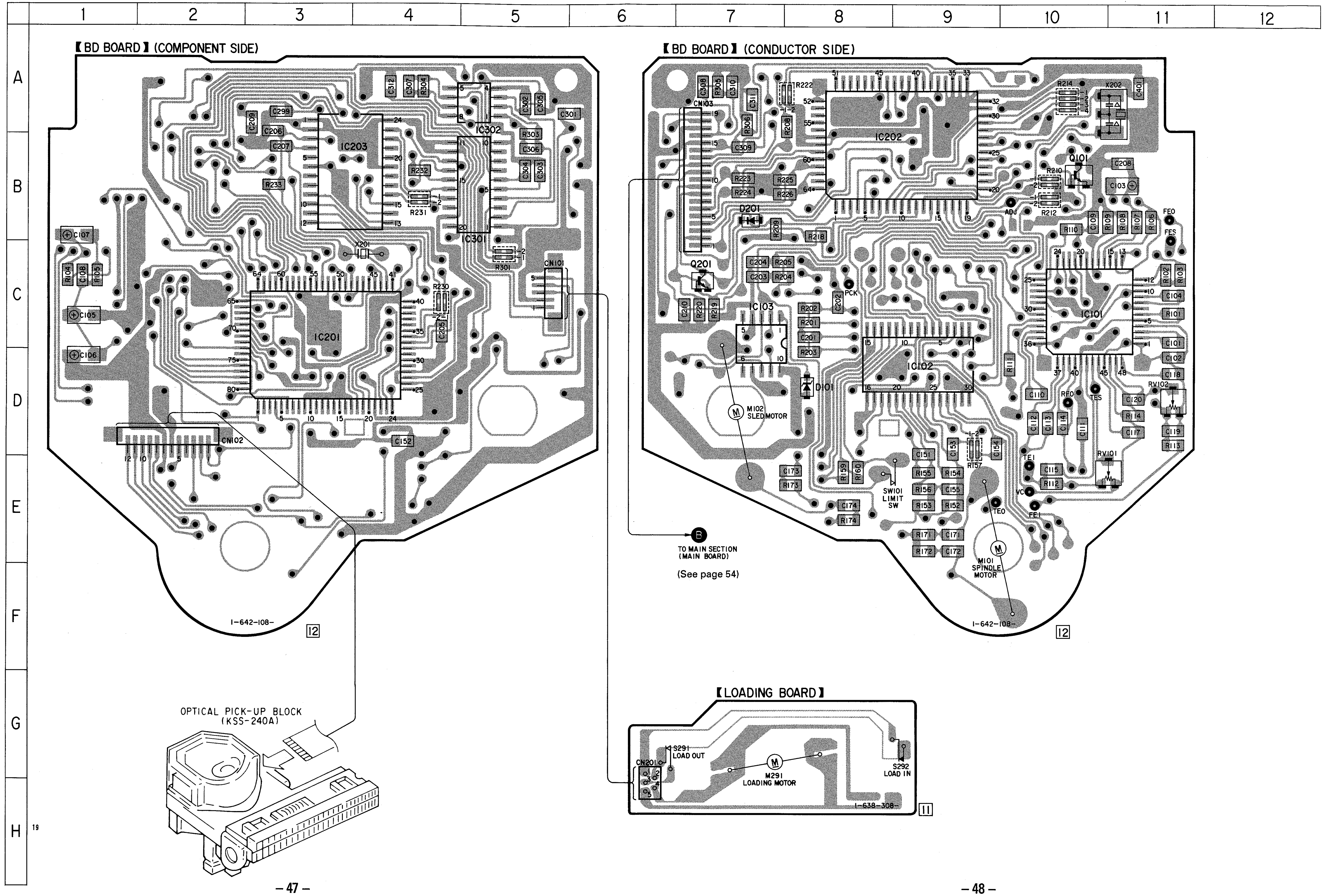
● SEMICONDUCTOR LOCATION

Ref. No.	Location
D101	D-8
D201	B-7
IC101	C-10
IC102	D-9
IC103	C-7
IC201	C-3
IC202	B-8
IC203	B-3
IC301	B-5
IC302	A-5
Q101	B-10
Q201	C-7

Notes on printed wiring boards:

- ○——: Indicated a lead wire mounted on the component side
- ●: Through hole
- ▨: Pattern from the side which enables seeing

• See page 16 for semiconductor lead layouts, 18 for circuit boards location.


1
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3
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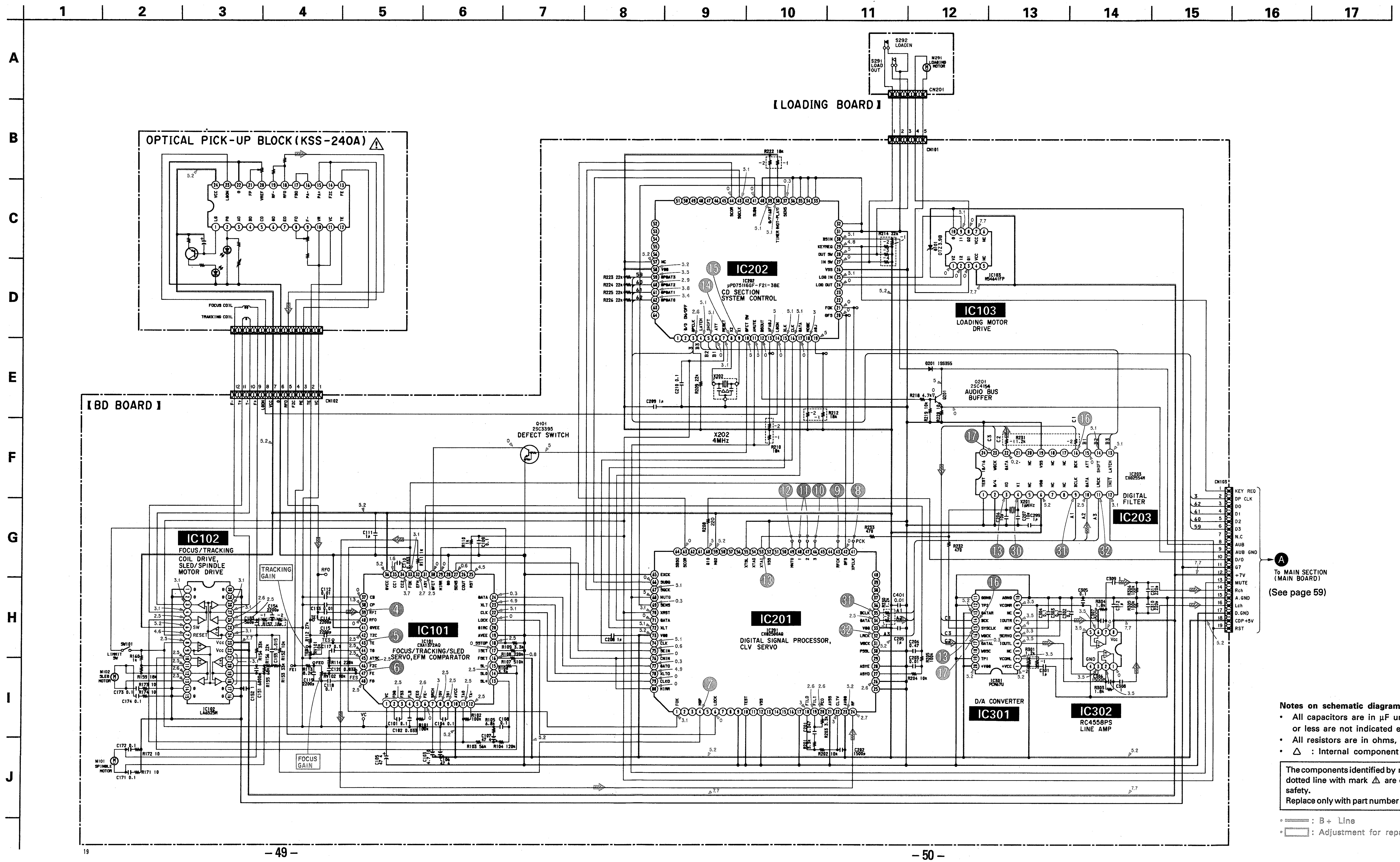
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
【BD BOARD】(COMPONENT SIDE)
【BD BOARD】(CONDUCTOR SIDE)
IC201
IC203
IC301
IC302
IC101
IC102
IC103
IC202
Q101
Q201
D101
D201
CN101
CN102
CN103
X201
X202
C107
C105
C106
M102 SLED MOTOR
M101 SPINDLE MOTOR
S101 LIMIT SW
RV101
RV102
FEO
FES
FEI
TEI
TEO
TES
RFO
VC
PCK
ADJ
1-642-108-
12
TO MAIN SECTION (MAIN BOARD)
(See page 54)
OPTICAL PICK-UP BLOCK (KSS-240A)
【LOADING BOARD】
CN201
S291 LOAD OUT
M291 LOADING MOTOR
S292 LOAD IN
1-638-308-
11
19

5-11. SCHEMATIC DIAGRAM (CD SECTION) (CD MECHANISM : CDM13BC-5BD4A USED, BASE UNIT : BU-5BD4A USED)

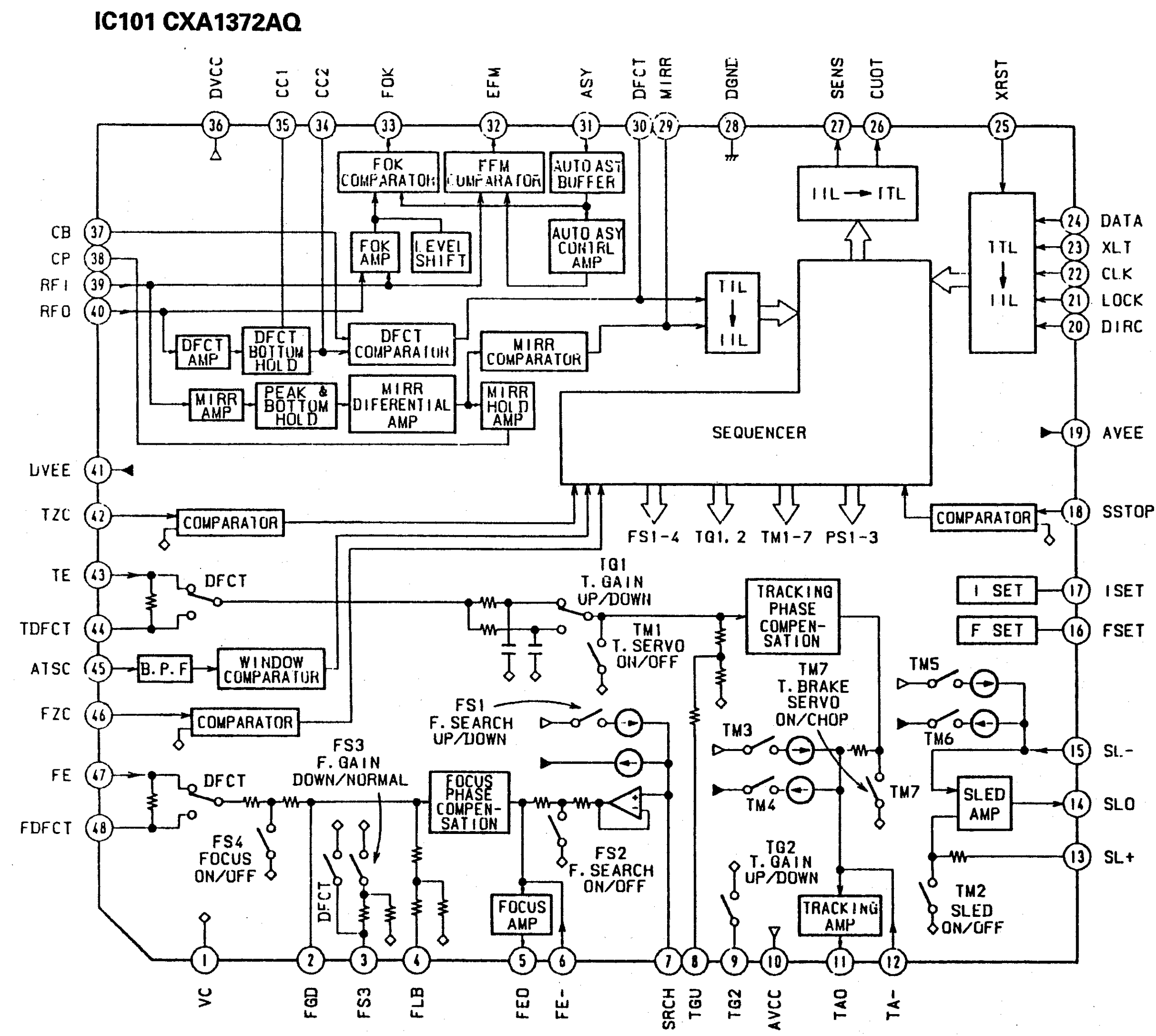
• See page 68 for IC (IC202) pin functions, 71 for waveforms.



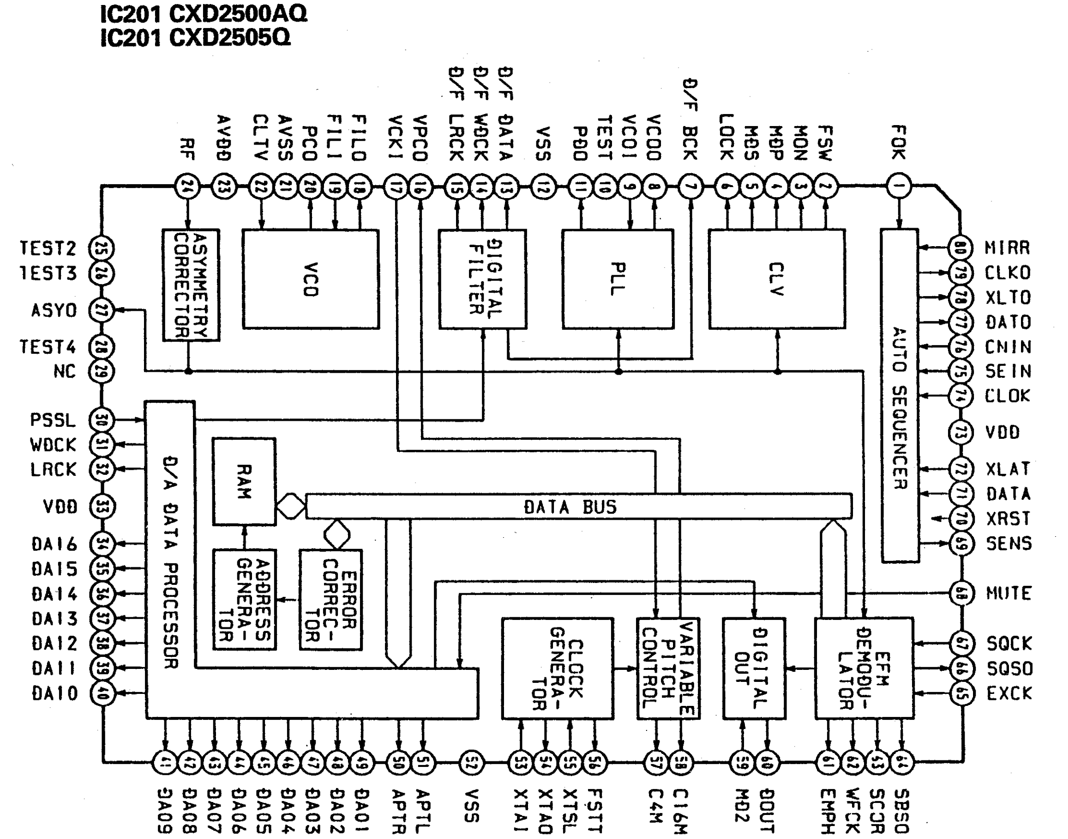
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
A B C D E F G H I J
[LOADING BOARD]
OPTICAL PICK-UP BLOCK (KSS-240A)
[BD BOARD]
IC202 CD SECTION SYSTEM CONTROL
IC103 LOADING MOTOR DRIVE
IC102 FOCUS/TRACKING COIL DRIVE, SLED/SPINDLE MOTOR DRIVE
IC101 FOCUS/TRACKING/SLED SERVO, EFM COMPARATOR
IC201 DIGITAL SIGNAL PROCESSOR, CLV SERVO
IC203 DIGITAL FILTER
IC301 D/A CONVERTER
IC302 RC4558PS LINE AMP
D101 DEFECT SWITCH
TRACKING GAIN
FOCUS GAIN
X202 4MHz
To MAIN SECTION (MAIN BOARD)
(See page 59)

IC BLOCK DIAGRAMS (CD SECTION)

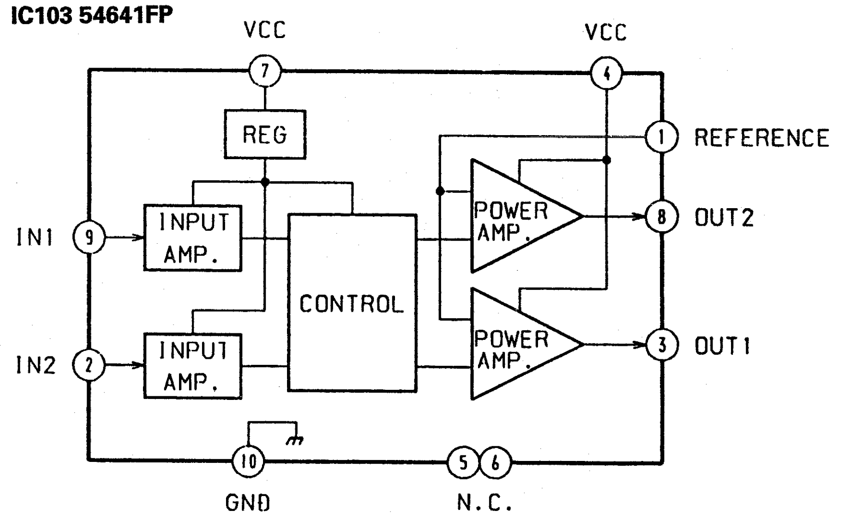
IC101 CXA1372AQ



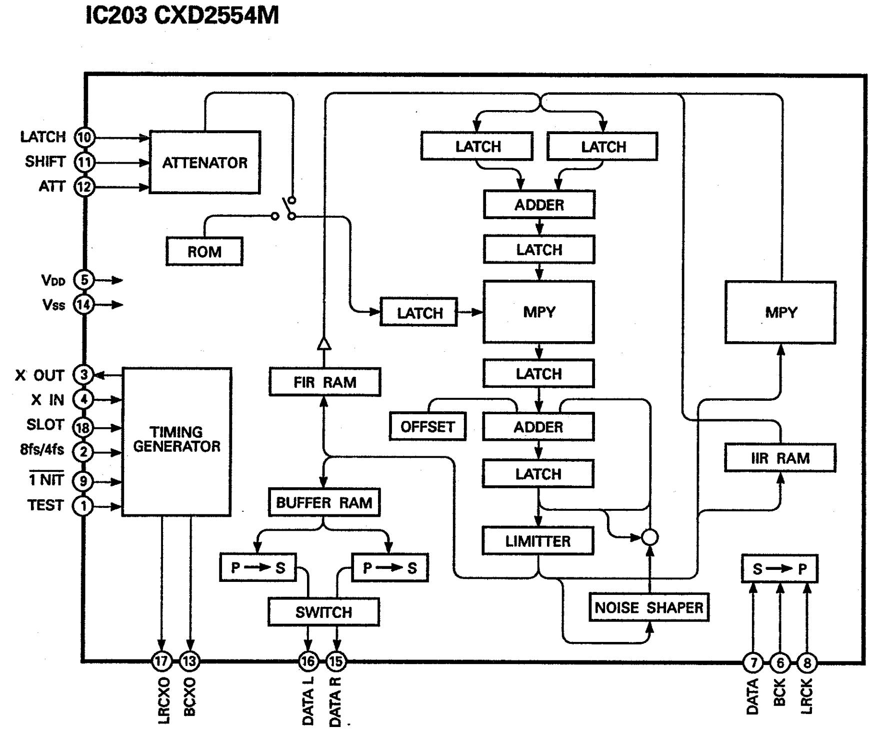
IC201 CXD2500AQ
IC201 CXD2505Q



IC103 54641FP



IC203 CXD2554M



Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : Internal component

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ═══ : B+ Line
- ▭ : Adjustment for repair

- Voltage are dc with respect to ground under no -signal conditions.
- No mark : STOP
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path

⇨ : CD

5-12. PRINTED WIRING BOARDS (MAIN / TUNER SECTION)

(TUNER BOARD : Australian, E, Saudi Arabia Models
See page 62 for AEP, UK, Germany, East European Models)

● SEMICONDUCTOR LOCATION

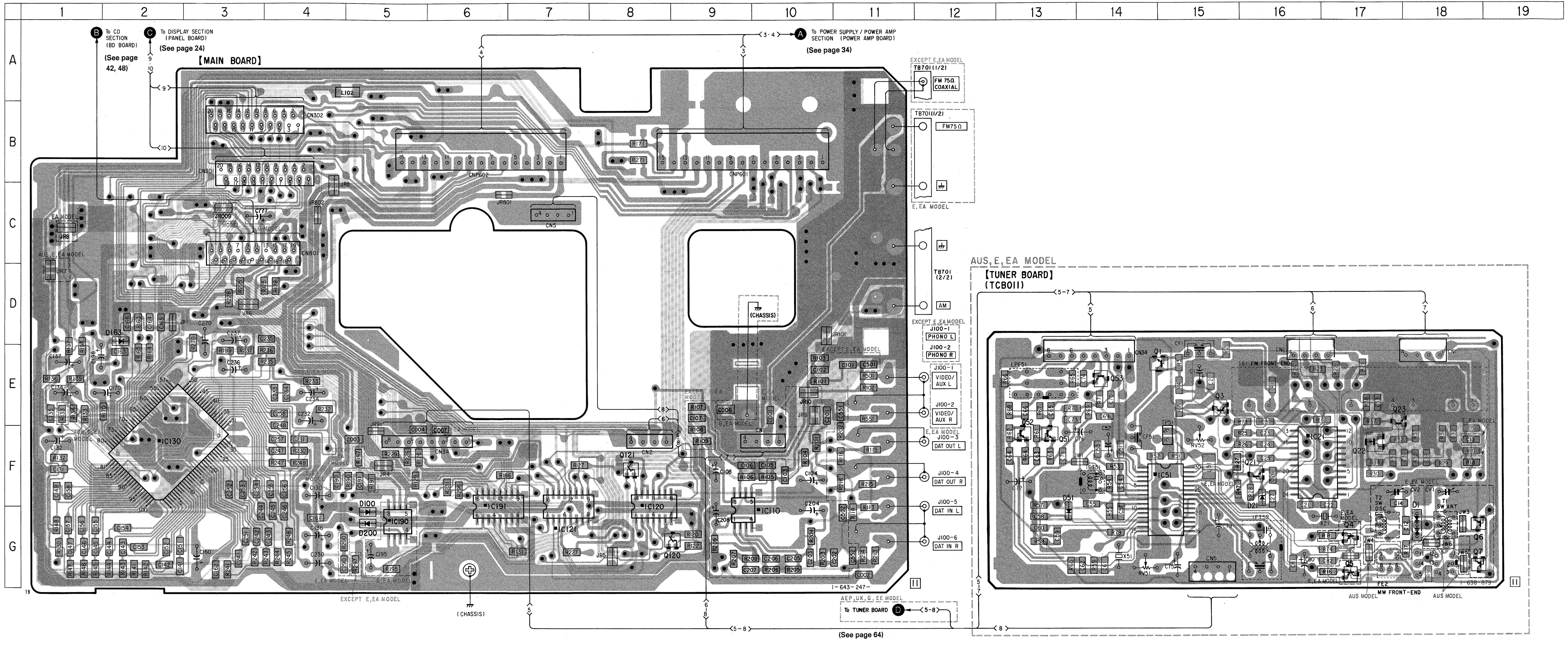
Ref. No.	Location
D1	G-18
D21	F-16
D51	F-13
D100	F-5
D163	D-2
D200	G-5
IC21	F-16
IC51	F-15
IC110	G-10
IC120	F-8
IC121	G-7
IC130	F-2
IC190	G-5
IC191	F-6
Q1	E-14
Q3	E-15
Q4	G-17
Q5	G-17
Q6	G-18
Q7	G-18
Q21	F-16
Q22	F-17
Q23	E-17
Q51	F-13
Q52	F-13
Q53	E-14
Q120	G-8
Q121	F-8

Notes on printed wiring boards:

- o——: Indicated a lead wire mounted on the component side
- ■ : Parts mounted on the conductor side
- ● : Through hole
- ▨ : Pattern from the side which enables seeing
- ▨ : Pattern of the rear side

- G : Germany Model
- AUS : Australian Model
- EA : Saudi Arabia Model
- EE : East European Model

• See page 16 for semiconductor lead layouts, 18 for circuit boards location.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7
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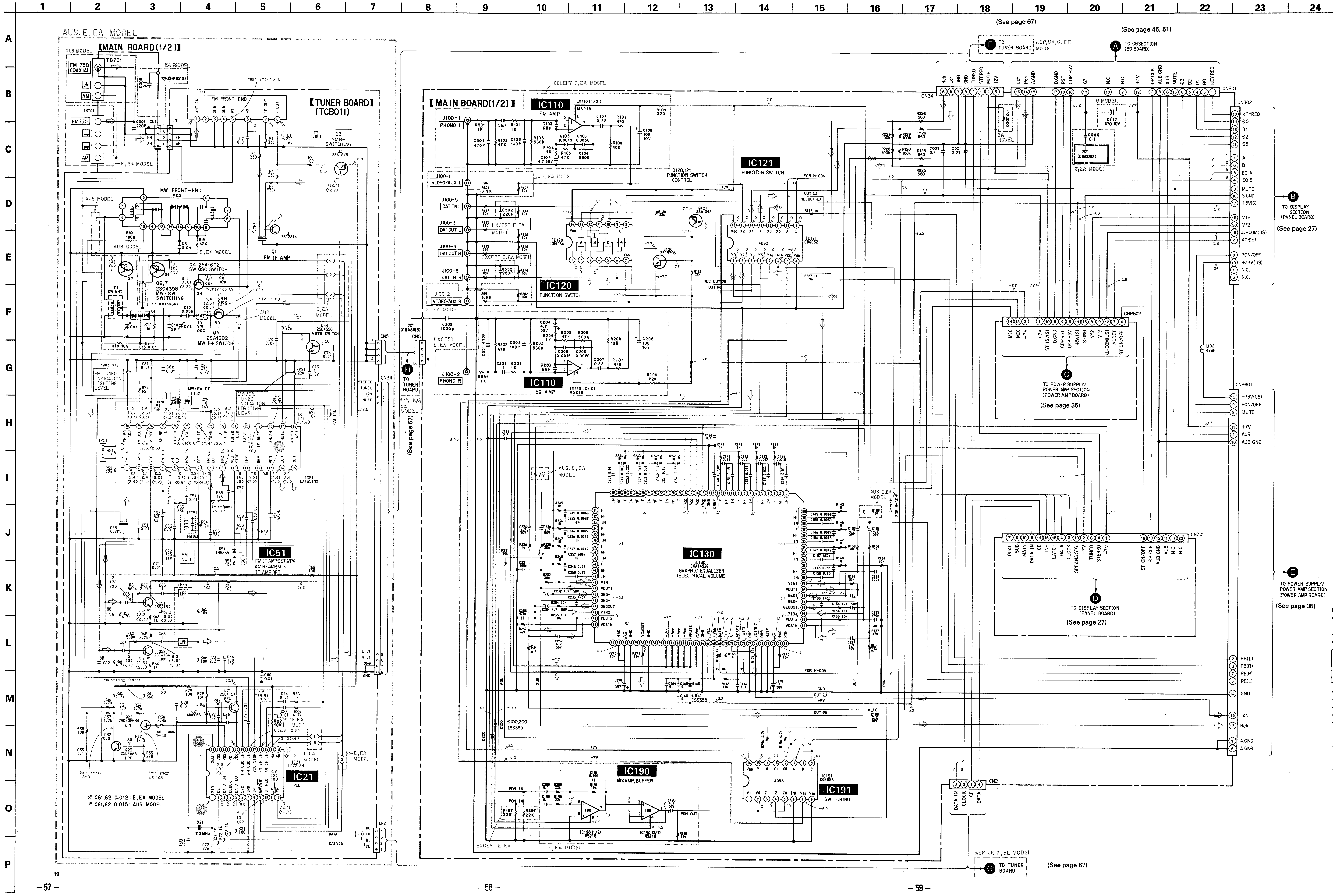
9
10
11
12
13
14
15
16
17
18
19
A
B
C
D
E
F
G
B To CD SECTION (BD BOARD)
(See page 42, 48)
C To DISPLAY SECTION (PANEL BOARD)
(See page 24)
A To POWER SUPPLY / POWER AMP SECTION (POWER AMP BOARD)
(See page 34)
【MAIN BOARD】
CN302
CN301
CNP602
CNP601
CN5
CN801
CN2
CN54
IC130
IC190
IC191
IC121
IC120
IC110
Q120
Q121
D100
D200
D163
L102
JR801
JR802
(CHASSIS)
EXCEPT E,EA MODEL
T8701(1/2)
FM 75Ω COAXIAL
T8701(1/2)
FM75Ω
E,EA MODEL
T8701 (2/2)
AM
J100-1 PHONO L
J100-2 PHONO R
J100-1 VIDEO/AUX L
J100-2 VIDEO/AUX R
J100-3 DAT OUT L
J100-4 DAT OUT R
J100-5 DAT IN L
J100-6 DAT IN R
1-643-247-
AEP,UK,G,EE MODEL
To TUNER BOARD D
(See page 64)
AUS,E,EA MODEL
【TUNER BOARD】
(TCB011)
IC21
IC51
Q1
Q3
Q4
Q5
Q6
Q7
Q21
Q22
Q23
Q51
Q52
Q53
D1
D21
D51
CN5
FE2
FM FRONT-END
MW FRONT-END
AUS MODEL
1-638-879-

5-13. SCHEMATIC DIAGRAM (MAIN / TUNER SECTION) TUNER BOARD : Australian, E, Saudi Arabia Models

- See page 65 for AEP, UK, Germany, East European Models.
- See page 61 for IC block diagrams, 71 for waveforms.


AUS.E.EA MODEL
【MAIN BOARD(1/2)】
【TUNER BOARD】 (TCB011)
FM 75Ω COAXIAL
AM
FM FRONT-END
MW FRONT-END FE2
Q1 FM IF AMP
Q3 FMB+ SWITCHING
Q4 2SA1602 SW OSC SWITCH
Q5 2SA1602 MW B+ SWITCH
Q6,7 2SC4398 MW/SW SWITCHING
Q51 2SC4398 MUTE SWITCH
IC51 FM IF AMP,DET,MPX, AM RF AMP,MIX, IF AMP,DET
IC21 PLL
X21 7.2MHz
※ C61,62 0.012 : E,EA MODEL
※ C61,62 0.015 : AUS MODEL
TO TUNER BOARD
(See page 67)
IC110 EQ AMP
IC120 FUNCTION SWITCH
IC121 FUNCTION SWITCH
Q120,121 FUNCTION SWITCH CONTROL
J100-1 PHONO L
J100-2 PHONO R
J100-1 VIDEO/AUX L
J100-2 VIDEO/AUX R
J100-3 DAT OUT L
J100-4 DAT OUT R
J100-5 DAT IN L
J100-6 DAT IN R
IC130 CXA1492Q GRAPHIC EQUALIZER (ELECTRICAL VOLUME)
IC190 MIX AMP, BUFFER
IC191 SWITCHING
EXCEPT E,EA MODEL
E,EA MODEL
F TO TUNER BOARD AEP,UK,G,EE MODEL (See page 67)
A TO CD SECTION (BD BOARD) (See page 45, 51)
B TO DISPLAY SECTION (PANEL BOARD) (See page 27)
C TO POWER SUPPLY/ POWER AMP SECTION (POWER AMP BOARD) (See page 35)
D TO DISPLAY SECTION (PANEL BOARD) (See page 27)
E TO POWER SUPPLY/ POWER AMP SECTION (POWER AMP BOARD) (See page 35)
G TO TUNER BOARD AEP,UK,G,EE MODEL (See page 67)
CN801
CN302
CNP602
CNP601
CN301
CN34
CN2
CN5
L102 47μH

Notes on schematic diagram:
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : Internal component

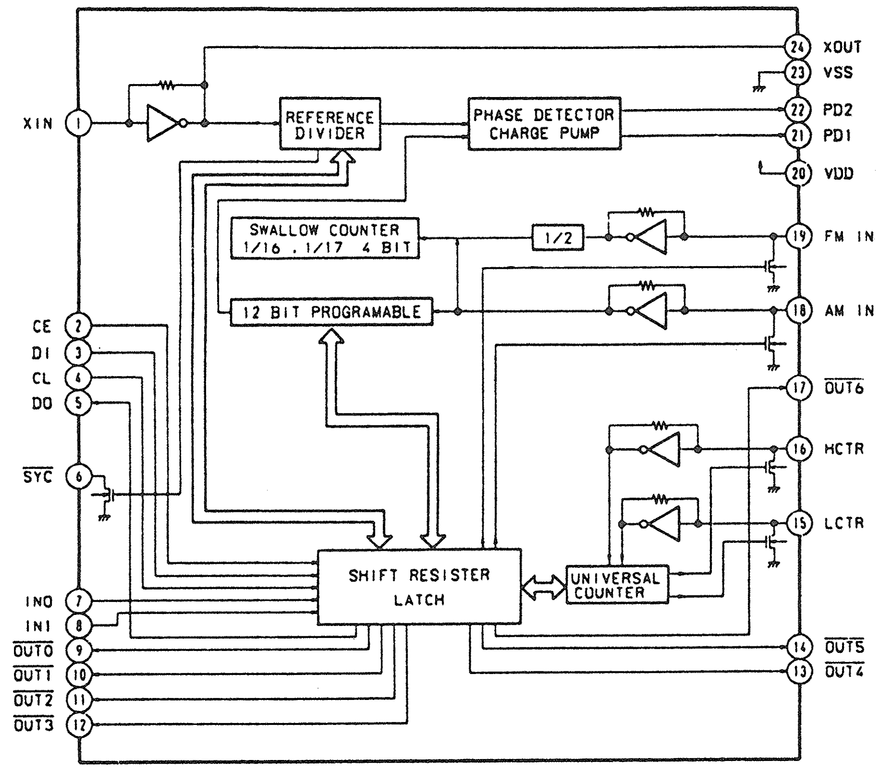
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ▬▬ : B+ Line
- ▪▪▪▪ : B− Line
- ☐ : Adjustment for repair.
- Voltage are dc with respect to ground under no -signal conditions.
- No mark : FM, CD
  ( ) : MW
  < > : SW
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path
  ⇨ : FM
  ⇨ : CD

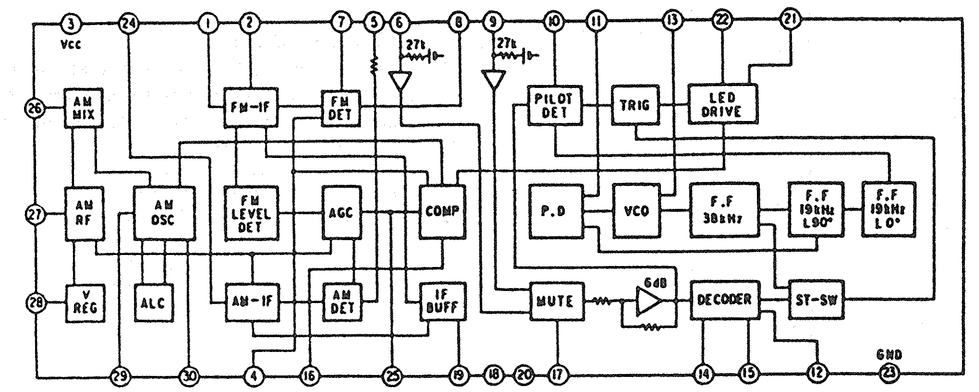
- G : Germany Model
- AUS : Australian Model
- EA : Saudi Arabia Model
- EE : East European Model

● IC BLOCK DIAGRAMS (MAIN / TUNER SECTION)

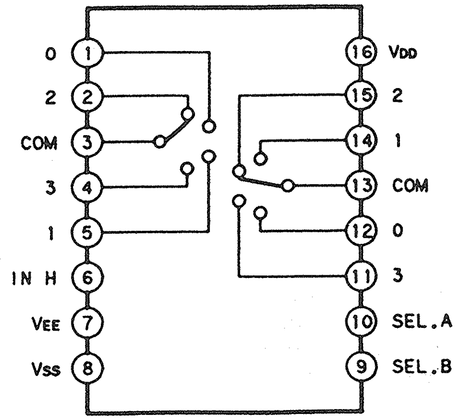
IC21 LA7218M


XOUT
VSS
PD2
PD1
VDD
FM IN
AM IN
OUT6
HCTR
LCTR
OUT5
OUT4
XIN
CE
DI
CL
DO
STC
IN0
IN1
OUT0
OUT1
OUT2
OUT3
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
SWALLOW COUNTER 1/16, 1/17 4 BIT
1/2
12 BIT PROGRAMABLE
SHIFT RESISTER LATCH
UNIVERSAL COUNTER

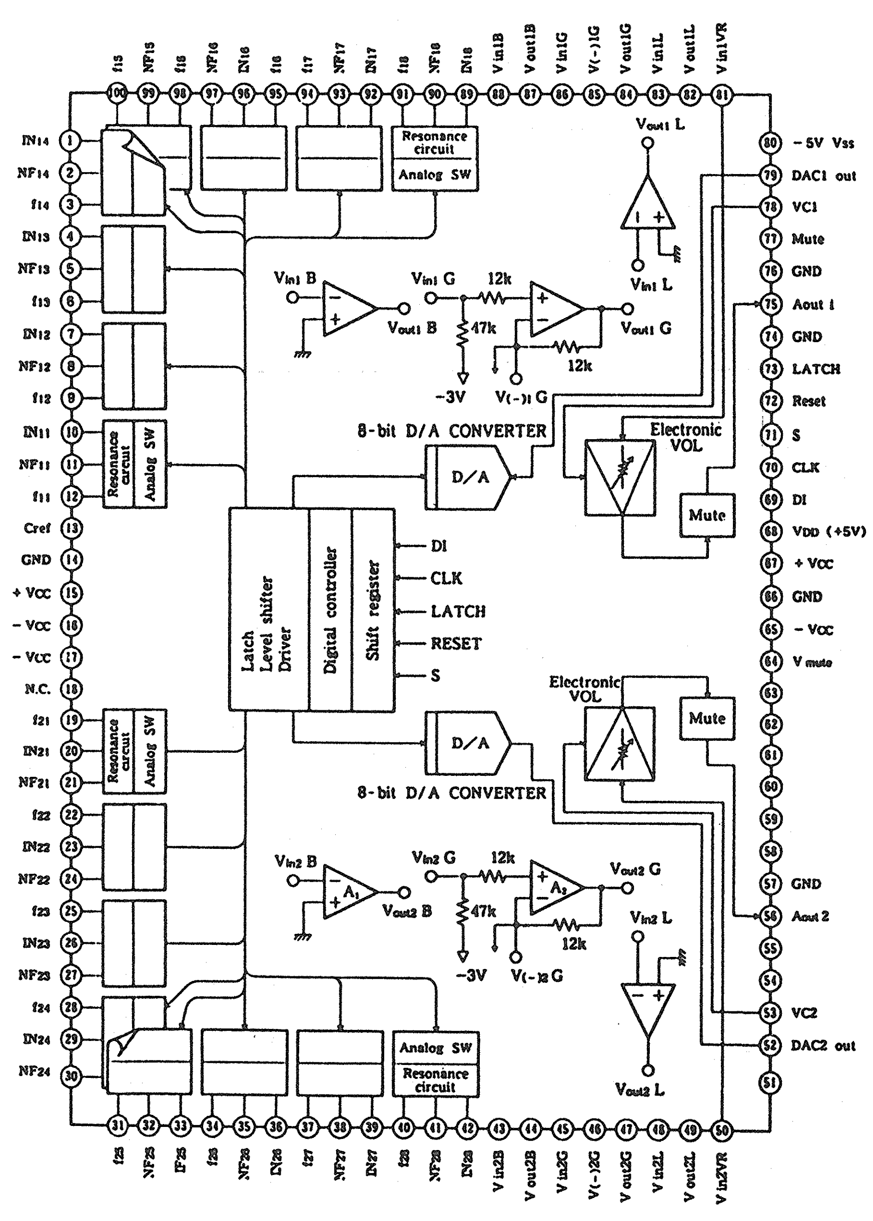
IC51 LA1851NM


AM MIX
FM-IF
FM DET
PILOT DET
TRIG
LED DRIVE
AM RF
AM OSC
FM LEVEL DET
AGC
COMP
P.D
VCO
F.F 38kHz
F.F 19kHz L90°
F.F 19kHz L0°
REG
ALC
AM-IF
AM DET
IF BUFF
MUTE
DECODER
ST-SW
GND

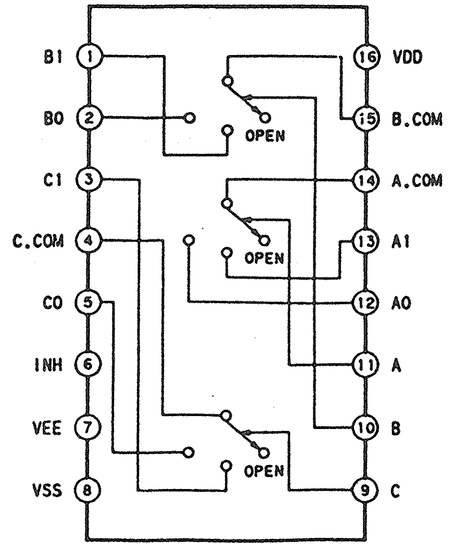
IC121 CD4052BCM


0
2
COM
3
1
INH
VEE
Vss
VDD
2
1
COM
0
3
SEL.A
SEL.B

IC130 CXA1492Q


-5V Vss
DAC1 out
VC1
Mute
GND
Aout 1
GND
LATCH
Reset
S
CLK
DI
VDD (+5V)
+Vcc
GND
-Vcc
V mute
GND
Aout 2
VC2
DAC2 out
Resonance circuit
Analog SW
8-bit D/A CONVERTER
Electronic VOL
Mute
D/A
DI
CLK
LATCH
RESET
S
Latch Level shifter Driver
Digital controller
Shift register
Cref
GND
+Vcc
-Vcc
N.C.

IC191 CD4053BCM


B1
B0
C1
C.COM
C0
INH
VEE
VSS
VDD
B.COM
A.COM
A1
A0
A
B
C
OPEN

5-14. PRINTED WIRING BOARDS (TUNER SECTION)

(AEP, UK, Germany, East European Models)

● SEMICONDUCTOR LOCATION

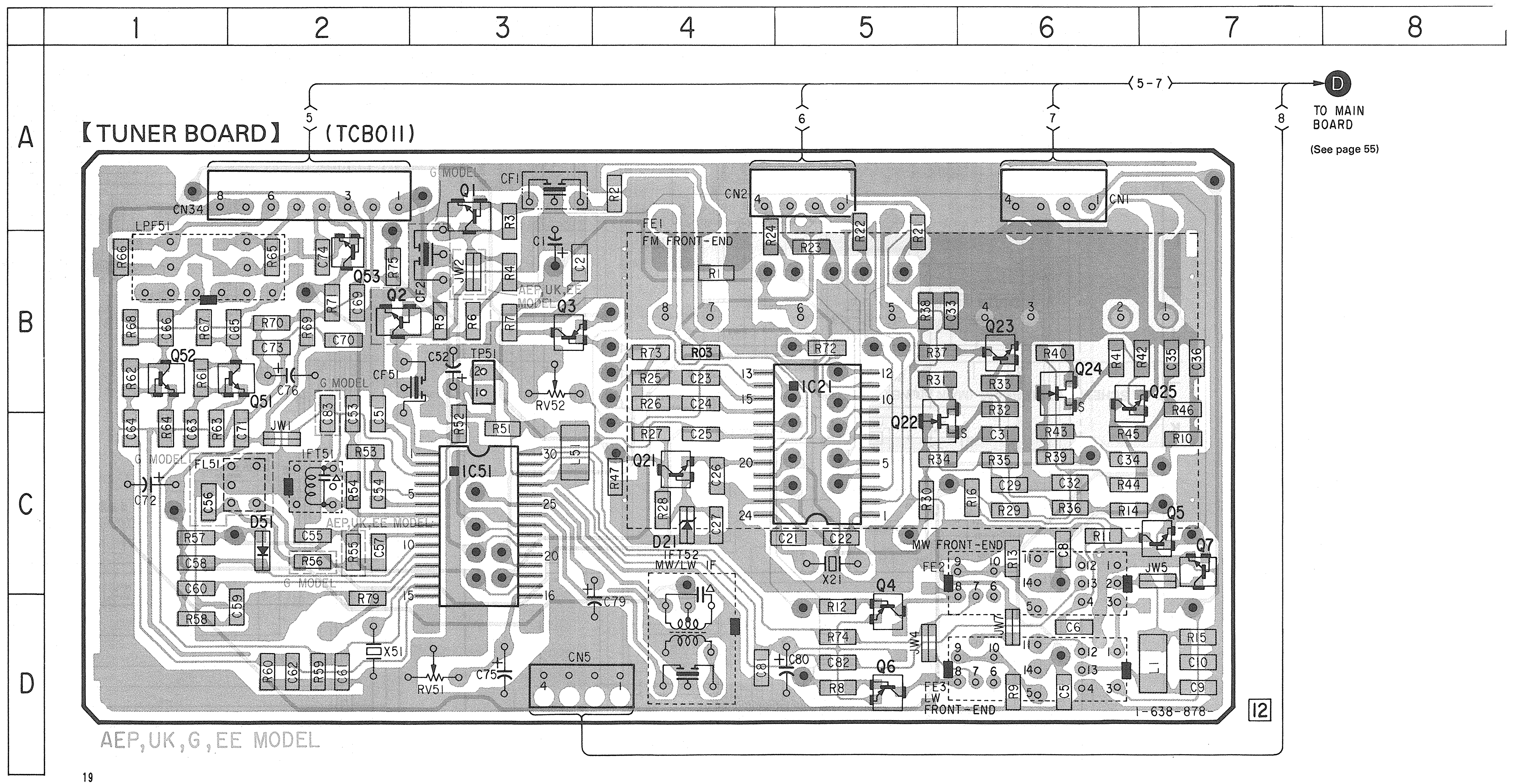
Ref. No.	Location
D21	C-4
D51	C-2
IC21	B-5
IC51	C-3
Q1	A-3
Q2	B-2
Q3	B-3
Q4	D-5
Q5	C-7
Q6	D-5
Q7	C-7
Q21	C-4
Q22	C-5
Q23	B-6
Q24	B-6
Q25	B-7
Q51	B-2
Q52	B-1
Q53	B-2

Notes on prin wiring boards:

- ∘—— : Indicated a lead wire mounted on the component side
- ■ : Parts mounted on the conductor side
- ● : Through hole
- ▨ : Pattern from the side which enables seeing
- ▨ : Pattern of the rear side

- G : Germany Model
- EE : East European Model

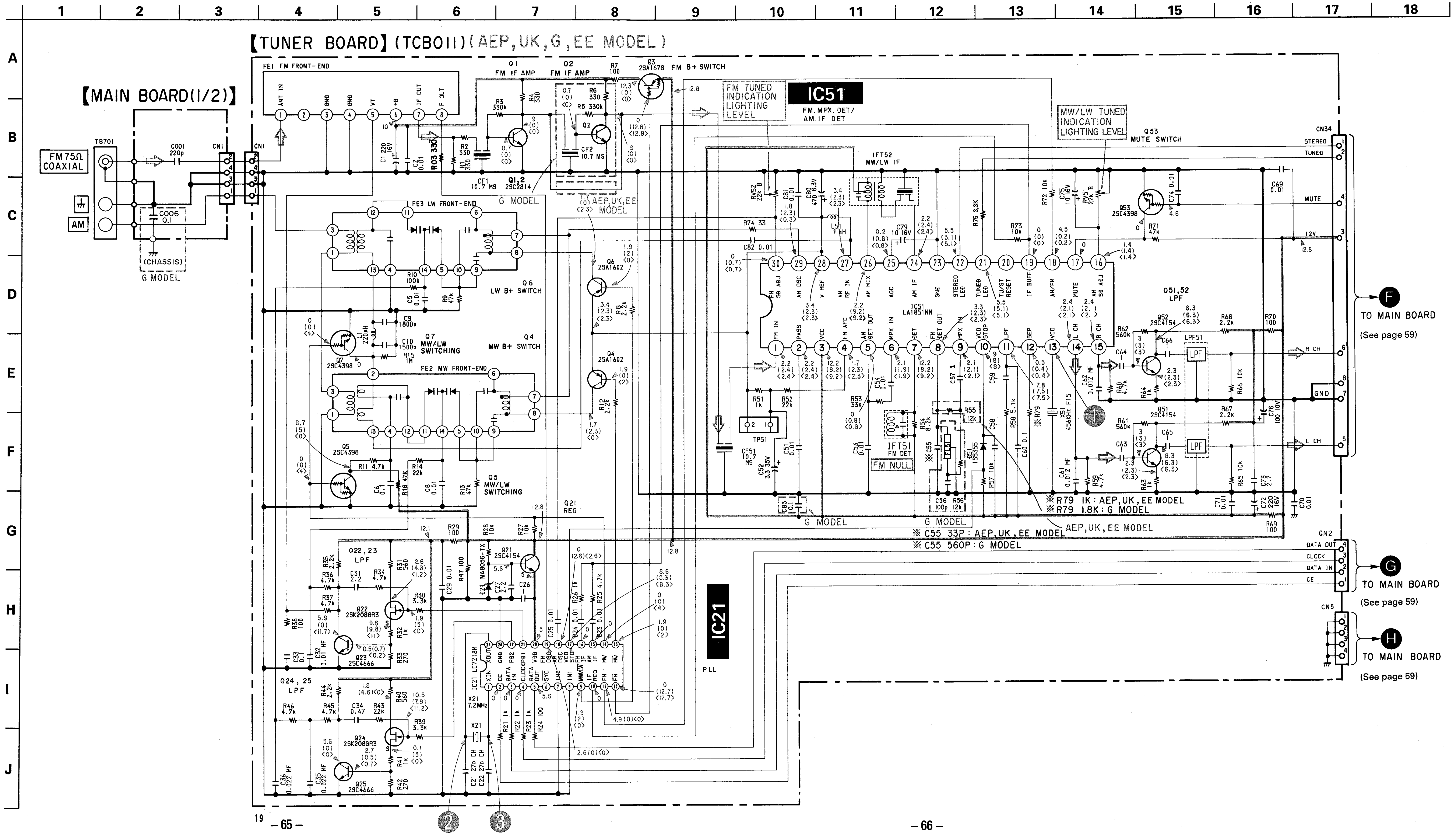
- See page 16 for semiconductor lead layouts, 18 for circuit boards location.


1
2
3
4
5
6
7
8
A
B
C
D
【TUNER BOARD】 (TCB011)
TO MAIN BOARD
(See page 55)
D
5-7
CN34
CN2
CN1
CN5
LPF51
FE1 FM FRONT-END
MW FRONT-END
FE3 LW FRONT-END
FE2
IFT52 MW/LW IF
IC21
IC51
G MODEL
AEP,UK,EE MODEL
1-638-878-
12
AEP,UK,G,EE MODEL
19

5-15. SCHEMATIC DIAGRAM (TUNER SECTION)

(AEP, UK, Germany, East European Models)

• See page 61 for IC block diagrams, 71 for waveforms.


1
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6
7
8
9
10
11
12
13
14
15
16
17
18
A
B
C
D
E
F
G
H
I
J
【TUNER BOARD】(TCB011)(AEP, UK, G, EE MODEL)
【MAIN BOARD(1/2)】
FM75Ω COAXIAL
AM
TB701
C001 220p
CN1
C006 0.1
(CHASSIS)
G MODEL
FE1 FM FRONT-END
ANT IN
GND
VT
+B
IF OUT
F OUT
Q1 FM IF AMP
Q2 FM IF AMP
Q3 2SA1678 FM B+ SWITCH
Q1,2 2SC2814
CF1 10.7 MS
CF2 10.7 MS
G MODEL
AEP, UK, EE MODEL
FE3 LW FRONT-END
Q6 LW B+ SWITCH
Q6 2SA1602
Q7 MW/LW SWITCHING
Q7 2SC4398
Q4 MW B+ SWITCH
Q4 2SA1602
FE2 MW FRONT-END
Q5 2SC4398
Q5 MW/LW SWITCHING
Q21 REG
Q21 2SC4154
Q22,23 LPF
Q22 2SK208GR3
Q23 2SC4666
Q24, 25 LPF
Q24 2SK208GR3
Q25 2SC4666
IC21 LC7218M
X21 7.2MHz
IC21
PLL
FM TUNED INDICATION LIGHTING LEVEL
IC51
FM.MPX.DET/ AM.IF.DET
IC51 LA1851NM
IFT52 MW/LW IF
MW/LW TUNED INDICATION LIGHTING LEVEL
Q53 MUTE SWITCH
Q53 2SC4398
TP51
IFT51 FM DET
FM NULL
Q51,52 LPF
Q52 2SC4154
Q51 2SC4154
LPF51
LPF
X51 456kHz FIS
※R79 1K : AEP, UK, EE MODEL
※R79 1.8K : G MODEL
AEP, UK, EE MODEL
※C55 33P : AEP, UK, EE MODEL
※C55 560P : G MODEL
CN34
STEREO
TUNED
MUTE
12V
R CH
GND
L CH
TO MAIN BOARD
(See page 59)
CN2
DATA OUT
CLOCK
DATA IN
CE
TO MAIN BOARD
(See page 59)
CN5
TO MAIN BOARD
(See page 59)
①
②
③

Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : Internal component

- ▬ : B+ Line
- ▭ : Adjustment for repair
- Voltage are dc with respect to ground under no -signal conditions.
- No mark : FM, CD
  ( ) : MW
  < > : LW
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path
  ⇨ : FM

- G : Germany Model
- EE : East European Model

5-16. IC PIN FUNCTIONS

• IC202 CD System Controller (μPD75116GF-F21-3BE)

Functions effected by the captioned controller include IC101 (RF signal processing, servo), IC201 (DSP, digital filter) and loading control in the CD unit, data exchange with IC301 (main system controller), audio bus entry, etc.

Pin No.	Pin Name	I/O	Description
1, 2		O	Not in use with the model (open).
3	DPCLK	O	Display data transfer clock output to IC301 (main system controller)
4-6		O	Control output to IC203 (CXD2554M)
7	RESET	I	System reset input. "L": Reset
8	X2	I	Clock input
9	X1	I	Clock input (4 MHz)
10	DFCT SW	O	DEFECT circuit ON/OFF switching output of IC101 (CXA1372AQ). It is turned OFF ("H") to focus-search the DISC flaw detection circuit.
11	AMUTE	O	Muting control output. "H": Mute
12	BSOUT	O	Audio bus output
13	AFADJ	I	Test mode input. Various test operations are effected upon "L" after turning ON the POWER.
14	LDON	O	Optical pickup laser diode ON/OFF switching output. "H": ON
15	XLT	O	Serial data latch output to IC201 (CXD2500AQ)
16	CLK	O	Serial data transfer clock output to IC201 (CXD2500AQ)
17	DATA	O	Serial data output to IC201 (CXD2500AQ)
18	MODE	I	Not in use with the model (pull up)
19	ADJ	I	Test mode input. Upon "L," GFS checking is disabled while continuously rotating the spindle no matter whether frame sync is issued during PLAY, PAUSE or SEARCH.
20	GFS	I	GFS signal input from IC201 (CXD2500AQ). "L": NG "H": OK
21	FOK	I	Focus OK signal input from IC101 (CXA1372AQ). "H": OK
22, 23		O	Not in use with the model (open)
24	LODOUT	O	Output to rotate M291 (loading motor) in the loading out direction. *1
25	LODIN	O	Output to rotate M291 (loading motor) in the loading in direction. *1
26	Vss	—	Power terminal (GND)
27	IN SW	I	S292 (Loading in switch) input
28	OUT SW	I	S291 (Loading out switch) input
29	KEY REQ	I	Key data request input from IC301 (main system controller)
30	BS IN	I	Audio bus input
31 - 36		I	Not in use with the model (GND)
37	SENS	I	SENS input from IC101 (CXA1372AQ) and IC201 (CXD2500AQ)
38	TIMER	I	Not in use with the model (pull up)
39	D/F 16BIT	I	IC201 (CXD2500AQ) digital filter mode setting input. It is fixed at 16 bit, 4fs with the model (pull up).
40		I	Not in use with the model (GND)
41	SUBQ	I	Subcode Q data input from IC201 (CXD2500AQ)
42		O	Not in use with the model (open)
43	SQCLK	O	Subcode Q data readout clock output to IC201 (CXD2500AQ)
44	SCOR	I	Subcode sync S0 + S1 detection input from IC201 (CXD2500AQ)
45 - 56		O	Not in use with the model (open)
57	N.C.	I	Not in use with the model (+5V)
58	VDD	—	Power terminal (+5V)
59 - 62	DPDATA3-0	I/O	Key data input and display data output with IC301 (main system controller)
63, 64		O	Not in use with the model (open)

*1 Loading motor control

	IN	OUT	BRAKE
LODOUT ㉔	L	H	H
LODIN ㉕	H	L	H

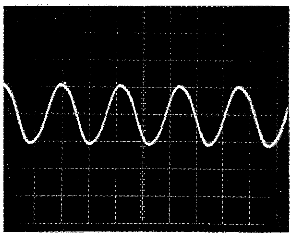
• IC301 Main System Controller (µPD78012GC-503-AB8)

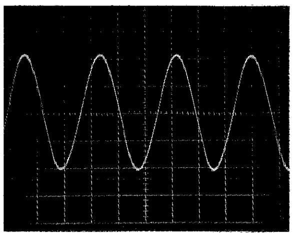
Controls indication of the FL tube, keying-in, controlling the spectrum analyzer and each function key, while communicating data with the IC202 (CD system controller) in 4-bit parallel communications.

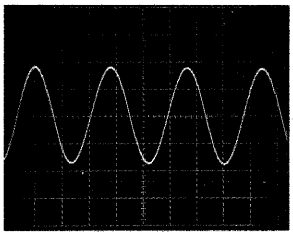
Pin No.	Pin Name	I/O	Description
1	D0	I/O	Key data output and display data input with IC202 (CD system controller)
2	D1	I/O	
3	D2	I/O	
4	D3	I/O	
5	ACK	O	Key data timing to IC202 (CD system controller)
6	AU B I	I	Audio bus input
7	AU B O	O	Audio bus output
8	SIRCS I	I	Sircs input
9	Vss	—	Power terminal (GND)
10	POWER	O	Power port (Active "L")
11	MUTE	O	Mute port (Active "L")
12	FUNC A	O	Function port A
13	FUNC B	O	Function port B
14	SURR	O	Surround ON/OFF port
15	KARAOKE	O	Karaoke pon ON/OFF port
16	SUB	—	Not in use with the model
17	MAIN	—	Not in use with the model
18	DUAL	—	Not in use with the model
19	STEREO	I	Tuner stereo input
20	SIGNAL	I	Tuner signal input
21	DATA I	I	Data signal input from IC21 (LC7812M)
22	DATA O	O	Data signal output to IC21 (LC7812M), IC309 (M66312FP) and IC130 (CXA1492Q)
23	CLOCK	O	Clock signal output to IC21 (LC7812M), IC309 (M66312FP) and IC130 (CXA1492Q)
24	Vss	—	Power terminal (GND)
25	CE	O	Chip enable output to IC21 (LC7812M)
26	LATCH	O	Latch signal output to IC130 (CXA1492Q)
27	CK	O	Clock signal output to IC309 (M66312FP)
28	OE	O	Output enable output to IC309 (M66312FP)
29	FUNC C	O	Function port C
30	CD OFF	O	CD off port
31	GND	—	Power terminal (GND)
32	GND	—	Power terminal (GND)
33	VOL–	O	Motor volume control output (–)
34	VOL+	O	Motor volume control output (+)
35	RESET	I	Reset signal input
36	BACK UP	I	Back up detection input (power failure detection)
37	DPCLK	I	Display data timing input from IC202 (CD system controller)
38	CLOCK	O	Clock signal output to IC302 (X24C01P)
39	DATA	I/O	Data signal to IC302 (X24C01P) and data signal from IC302 (X24C01P)
40	VDD	—	Power terminal (+5V)
41	X2	—	Main system clock (8.38MHz)
42	X1	—	
43	GND	—	Power terminal (GND)
44	XT2	—	Sub system clock (32.768kHz)
45	XT1	—	
46	AVSS	—	Power terminal (GND)
47	KEY 1	I	Key signal input
48	KEY 2	I	
49	KEY 3	I	
50	KEY 4	I	

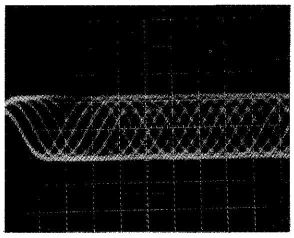
Pin No.	Pin Name	I/O	Description
51	SPE 1	I	} Spectrum analyzer signal level input
52	SPE 2	I	
53	VOL P	I	Volume position detection
54	AN17		Model detection port
55	AVDD	—	Power terminal (+5V)
56	AVREF	—	Power terminal (+5V)
57			N.C.
58	DATA	O	Data signal output to IC307 (SN755703)
59	CLOCK	O	Clock signal output to IC307 and IC308 (SN755703)
60	LATCH	O	Latch signal output to IC307 and IC308 (SN755703)
61	CL	O	Clear signal output to IC307 and IC308 (SN755703)
62	INH	O	Inhibit signal output to spectrum analyzer (IC306 CD4052BCM)
63	B	O	B control signal output to spectrum analyzer (IC306 CD4052BCM)
64	A	O	A control signal output to spectrum analyzer (IC306 CD4052BCM)

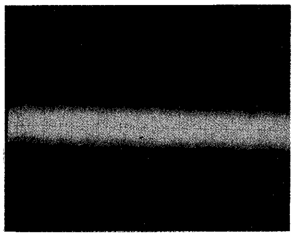
5-17. WAVEFORMS

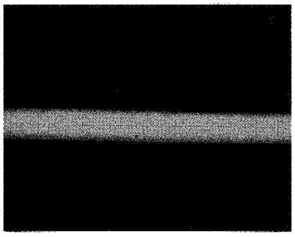

❶ IC51 ⑬pin (VCO)
2.3Vp-p, 2.2µsec

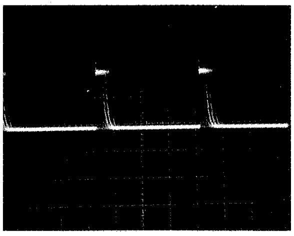

❷ IC21 ㉔pin (XOUT)
4.2Vp-p,145nsec

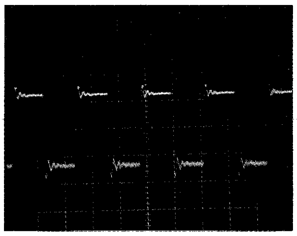

❸ IC21 ①pin (XIN)
2.6Vp-p, 145nsec

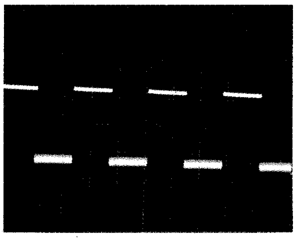

❹ IC101 ㊵pin (RFO),
PLAY MODE
Approx. 1.2Vp-p

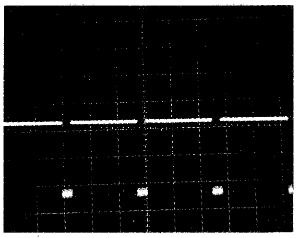

❺ IC101 ㊸pin (TE),
PLAY MODE
Approx. 600mVp-p

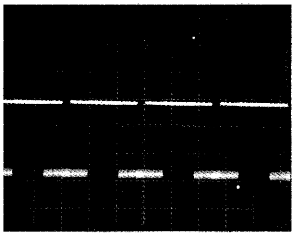

❻ IC101 ㊼pin (FE),
PLAY MODE
Approx. 60mVp-p

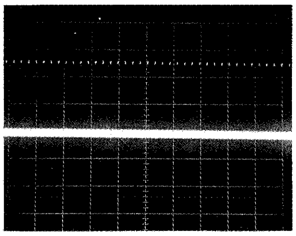

❼ IC201 ④pin (MDP)
PLAY MODE
2Vp-p, 7.6µsec

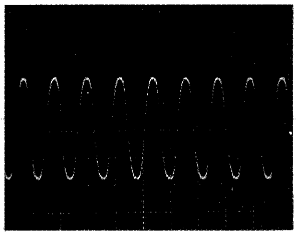

❽ IC201 ㊶pin (XPCLK)
6.8Vp-p, 0.23µsec

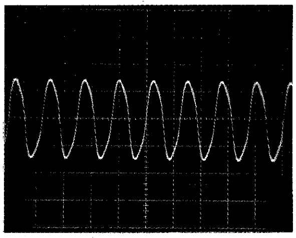

❾ IC201 ㊸pin (RFCK)
5.6Vp-p, 140µsec

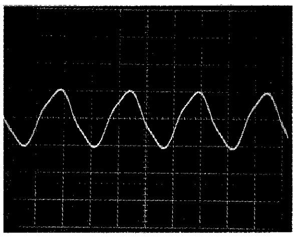

❿ IC201 ㊻pin (MNT3)
5.6Vp-p, 140µsec

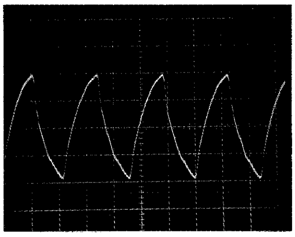

⓫ IC201 ㊼, ㊽pin
(MNT2, MNT1)
5.6Vp-p, 140µsec

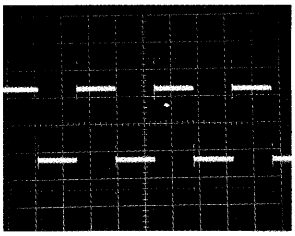

⓬ IC201 ㊾pin (MNT0)
5.6Vp-p, 140µsec

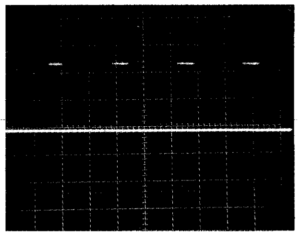

⓭ IC201 (53)pin (XTAl),
IC301 ⑮pin
(SYSCLK)
3.8Vp-p, 55nsec

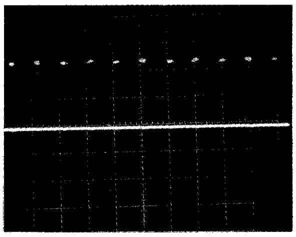

⓮ IC202 ⑧pin (X2)
6Vp-p, 0.26µsec

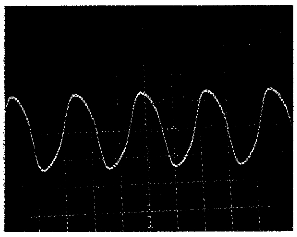

⓯ IC202 ⑨pin (X1)
4.4Vp-p, 0.26µsec

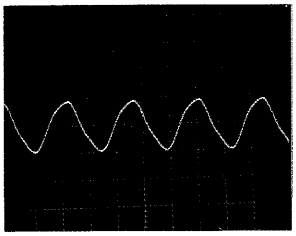

⓰ IC301 ⑭pin (BCK)
3.6Vp-p, 0.12µsec


⓱ IC301 ⑯pin (WDCK)
5.6Vp-p, 5.6µsec

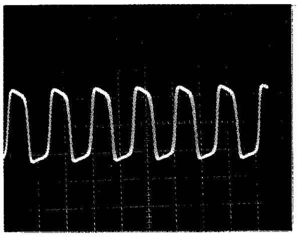

⓲ IC301 (58)pin (DATA)
4.8Vp-p, 0.48µsec


⓳ IC301 ㉓pin (CLOCK)
4.8Vp-p, 1.9msec

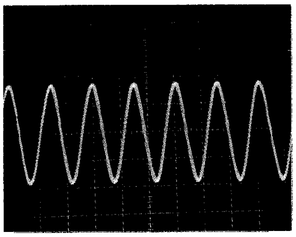

⓴ IC301 ㊶pin (X2)
5.6Vp-p, 0.12µsec



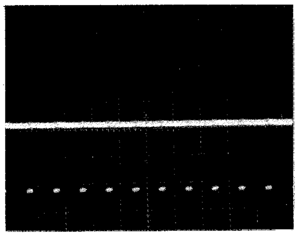
㉑ IC301 ㊷pin (X1)
3.8Vp-p, 0.12μsec



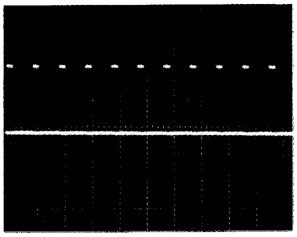
㉒ IC301 ㊹pin (XT2)
5.6Vp-p, 50μsec



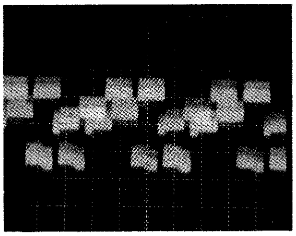
㉓ IC301 ㊺pin (XT1)
3.8Vp-p, 50μsec



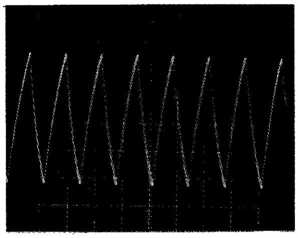
㉔ IC301 (59)pin (CLOCK)
5Vp-p, 0.48msec



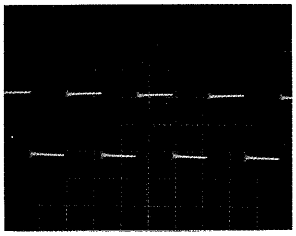
㉕ IC304 ②pin
5Vp-p, 0.48msec



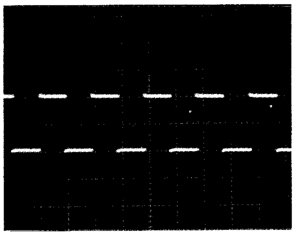
㉖ IC305 ①-⑦pin
1.9Vp-p, 7.8msec



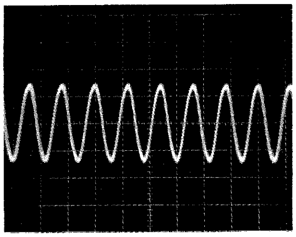
㉗ IC305 ⑬pin (CLC)
4.8Vp-p, 2.8μsec



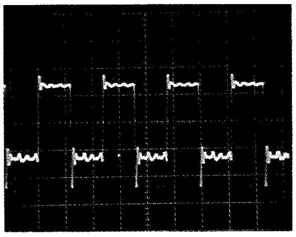
㉘ IC305 ⑭pin (CLR)
1.2Vp-p, 3.6μsec



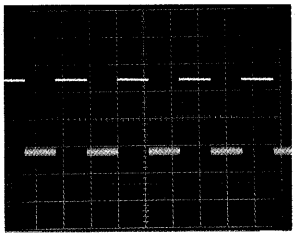
㉙ IC306 ⑨,⑩pin
4Vp-p, 4msec



㉚ IC203 ④pin (XI)
5.6Vp-p, 60nsec



㉛ IC201 ㉟pin (BCLK)
4.8Vp-p, 0.48μsec



㉜ IC201 ㉜pin, (LRCK)
5.6Vp-p, 23μsec

SECTION 6

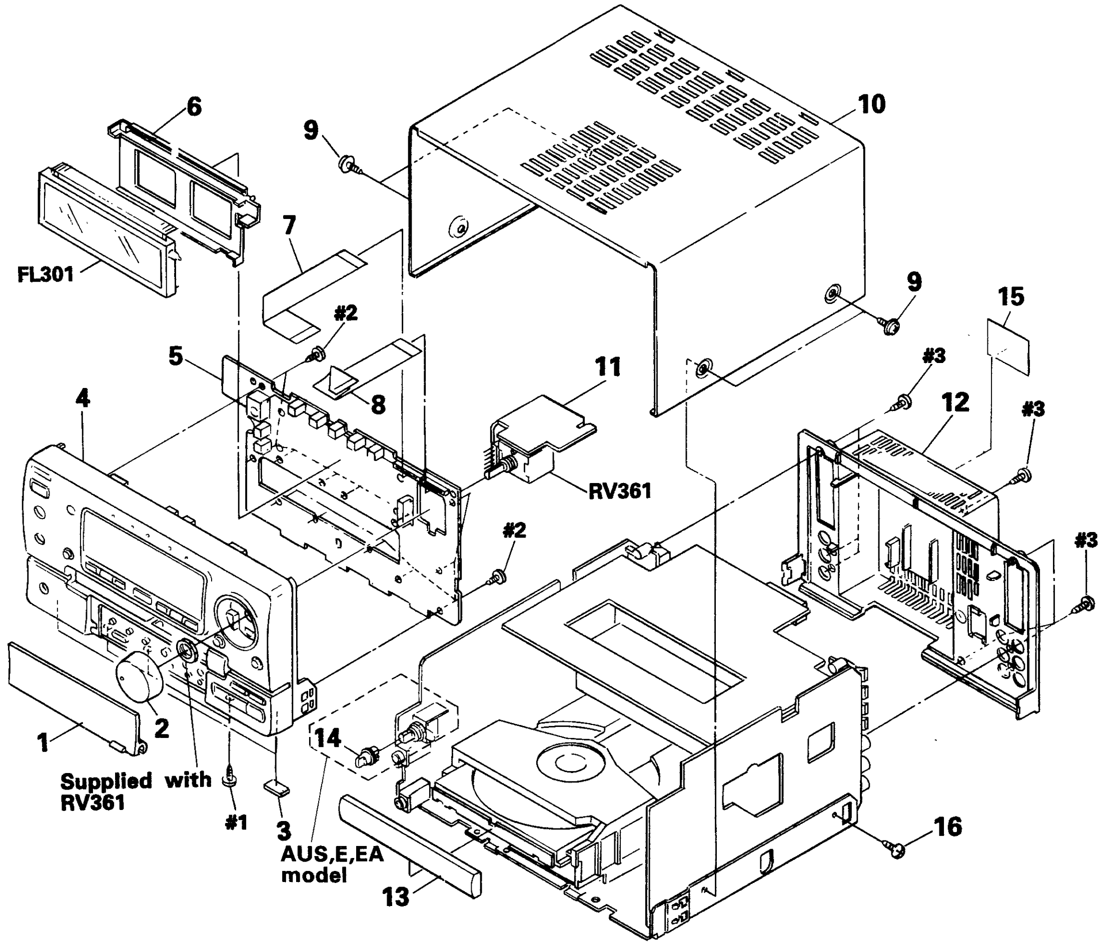
EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB,BALANCE(WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware(# mark) list is given in the last of this parts list.
- G : Germany Model
- AUS : Australian Model
- EA : Saudi Arabia Model
- EE : East European Model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

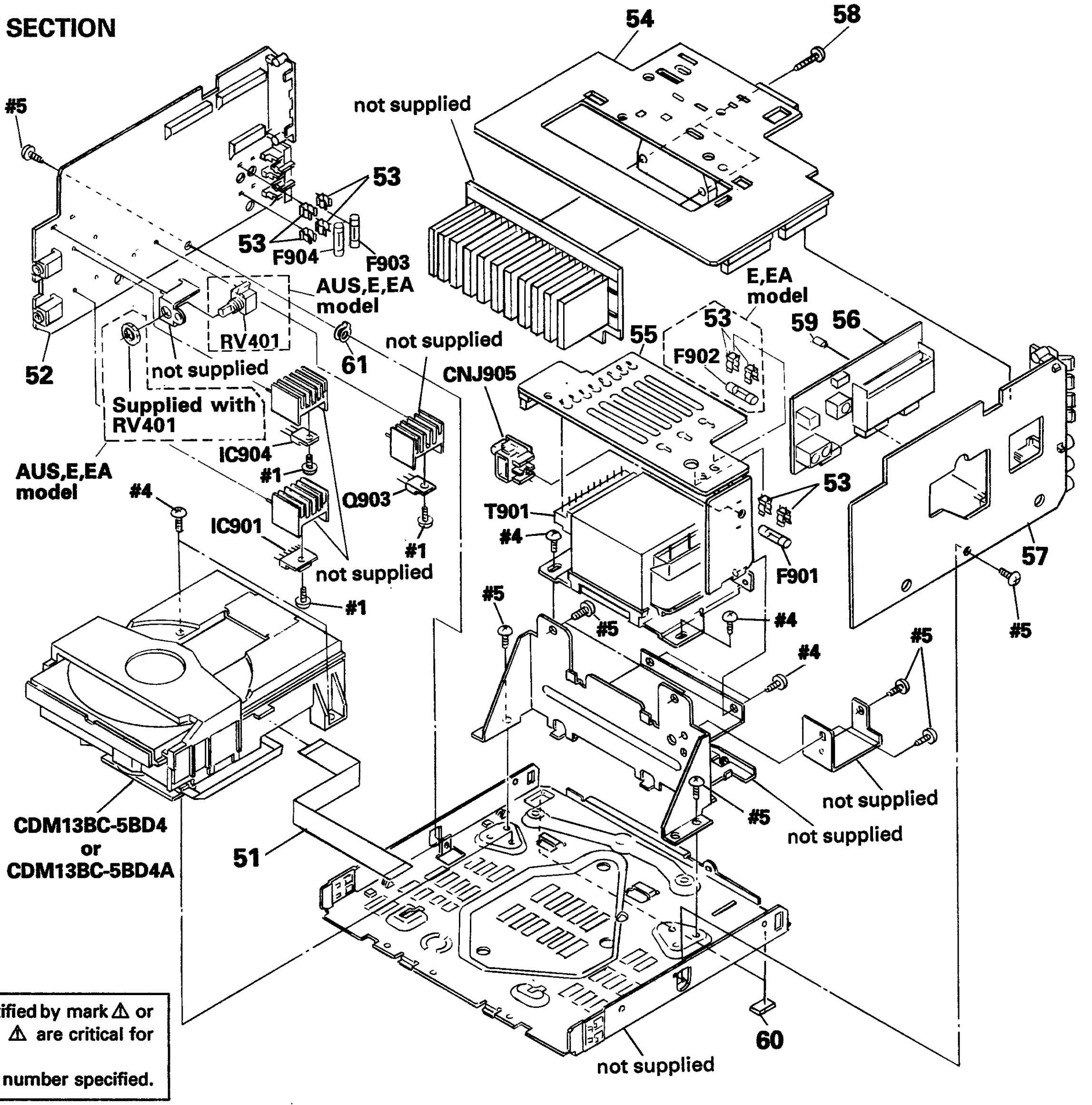
6-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remarks
1	X-4942-540-1	LID ASSY (E, EA, AUS)	
1	X-4942-543-1	LID ASSY (AEP, UK, G, EE)	
2	X-4942-539-1	KNOB (VOL) ASSY	
3	4-930-336-11	FOOT (FELT)	
4	X-4942-537-1	PANEL ASSY, FRONT (E, EA)	
4	X-4942-607-1	PANEL ASSY, FRONT (AUS)	
4	X-4942-606-1	PANEL ASSY, FRONT (AEP, UK, G)	
4	X-4942-606-2	PANEL ASSY, FRONT (EE)	
* 5	A-4347-098-A	PANEL BOARD, COMPLETE (AEP)	
* 5	A-4347-099-A	PANEL BOARD, COMPLETE (UK)	
* 5	A-4347-102-A	PANEL BOARD, COMPLETE (E)	
* 5	A-4356-051-A	PANEL BOARD, COMPLETE (AUS)	
* 5	A-4347-100-A	PANEL BOARD, COMPLETE (G)	
* 5	A-4356-042-A	PANEL BOARD, COMPLETE (EA)	
* 5	A-4356-040-A	PANEL BOARD, COMPLETE (EE)	

Ref. No.	Part No.	Description	Remarks
* 6	4-944-202-01	HOLDER (FL)	
7	1-590-907-11	WIRE, FLAT TYPE (20 CORE)	
8	1-590-908-11	WIRE, FLAT TYPE (20 CORE)	
9	3-704-366-01	SCREW (CASE) (M3X8)	
* 10	4-951-094-01	CASE	
* 11	1-643-251-11	VR BOARD	
* 12	4-951-092-01	PANEL, BACK (EXCEPT AEP, G, EE)	
* 12	4-951-092-11	PANEL, BACK (AEP, G)	
* 12	4-951-092-12	PANEL, BACK (EE)	
13	4-951-076-01	PANEL, LOADING	
14	4-932-882-11	KNOB (HP. VOL) (AUS, E, EA)	
* 15	4-941-548-01	LABEL, CLASS1	
16	3-703-599-61	SCREW (M3X5), S TITE, + BTT	
FL301	1-519-730-11	INDICATOR TUBE, FLUORESCENT	
RV361	1-241-803-11	RES, VAR, CARBON(WITH MOTOR) 10K(VOLUME)	

6-2. CHASSIS SECTION



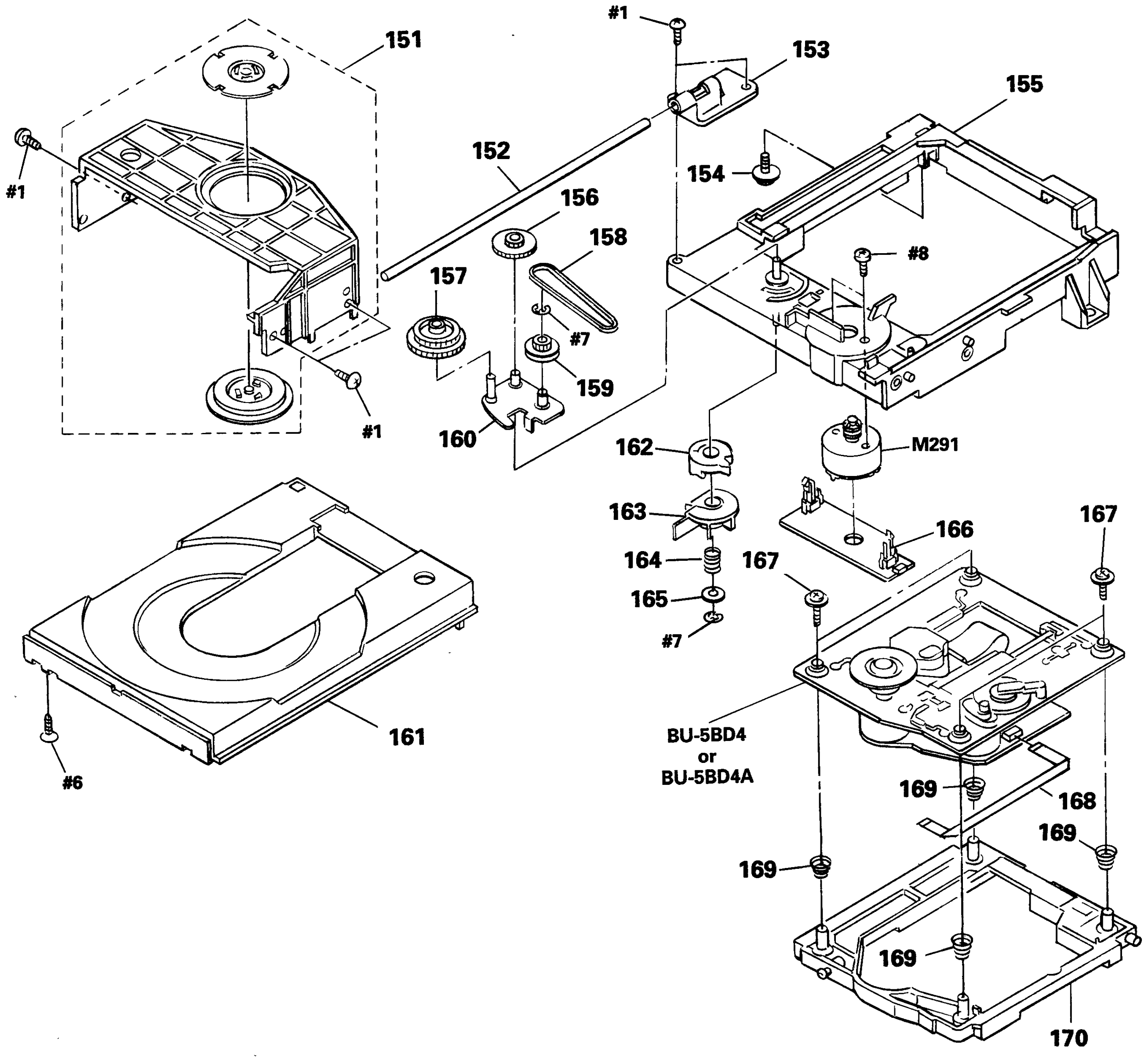
54
58
#5
not supplied
53
53
F904
F903
AUS,E,EA model
RV401
not supplied
61
52
not supplied
Supplied with RV401
IC904
#1
AUS,E,EA model
#4
IC901
Q903
#1
not supplied
#1
55
CNJ905
E,EA model
53
F902
59
56
53
T901
#4
F901
57
#5
#5
#5
#4
#4
#5
#5
not supplied
#5
not supplied
CDM13BC-5BD4 or CDM13BC-5BD4A
51
60
not supplied

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
51	1-590-906-11	WIRE, FLAT TYPE (19 CORE)	
* 52	A-4347-083-A	POWER SUPPLY BOARD, COMPLETE (EA)	
* 52	A-4347-085-A	POWER SUPPLY BOARD, COMPLETE (G)	
* 52	A-4347-711-A	POWER SUPPLY BOARD, COMPLETE (UK)	
* 52	A-4347-712-A	POWER SUPPLY BOARD, COMPLETE (AEP, EE)	
* 52	A-4356-044-A	POWER SUPPLY BOARD, COMPLETE (AUS, E)	
* 53	1-533-213-31	HOLDER, FUSE	
* 54	A-4347-088-A	POWER AMP BOARD, COMPLETE (EXCEPT UK, G)	
* 54	A-4347-089-A	POWER AMP BOARD, COMPLETE (G)	
* 54	A-4347-710-A	POWER AMP BOARD, COMPLETE (UK)	
* 55	1-643-250-11	TRANSFORMER BOARD	
* 56	A-4347-509-A	TUNER BOARD, COMPLETE (AEP, UK)	
* 56	A-4347-510-A	TUNER BOARD, COMPLETE (G)	
* 56	A-4347-508-A	TUNER BOARD, COMPLETE (AUS)	
* 56	A-4347-511-A	TUNER BOARD, COMPLETE (E, EA)	
* 56	A-4356-039-A	TUNER BOARD, COMPLETE (EE)	
* 57	A-4347-105-A	MAIN BOARD, COMPLETE (AEP, EE)	
* 57	A-4347-107-A	MAIN BOARD, COMPLETE (E)	
* 57	A-4347-106-A	MAIN BOARD, COMPLETE (G)	
* 57	A-4347-709-A	MAIN BOARD, COMPLETE (UK)	
* 57	A-4356-043-A	MAIN BOARD, COMPLETE (EA)	
* 57	A-4356-226-A	MAIN BOARD, COMPLETE (AUS)	
58	4-928-635-11	SCREW, +BV (2.6X16) TAPPING	
* 59	3-350-847-31	HOLDER, PCB	
60	4-930-336-11	FOOT (FELT)	
61	4-870-539-00	PLATE, GROUND	
⚠*CNJ905	1-526-930-11	INLET, AC (~AC IN) (AUS, E)	
⚠*CNJ905	1-526-931-11	INLET, AC (~AC IN) (EXCEPT AUS, E)	
⚠F901	1-532-203-00	FUSE (T2A)	
⚠F902	1-532-203-00	FUSE (T2A) (E, EA)	
⚠F903	1-532-286-00	FUSE (T2.5A)	
⚠F904	1-532-286-00	FUSE (T2.5A)	
IC901	8-759-820-09	IC LA5667	
IC904	8-759-231-61	IC TA7820S	
Q903	8-729-141-83	TRANSISTOR 2SB1094-LK	
RV401	1-241-140-11	RES, VAR, CARBON 10K (MIC LEVEL) (AUS, E, EA)	
⚠T901	1-450-825-11	TRANSFORMER, POWER (AEP, G, EE)	
⚠T901	1-450-826-11	TRANSFORMER, POWER (UK, AUS)	
⚠T901	1-450-827-11	TRANSFORMER, POWER (E, EA)	

6-3. CD MECHANISM SECTION 1

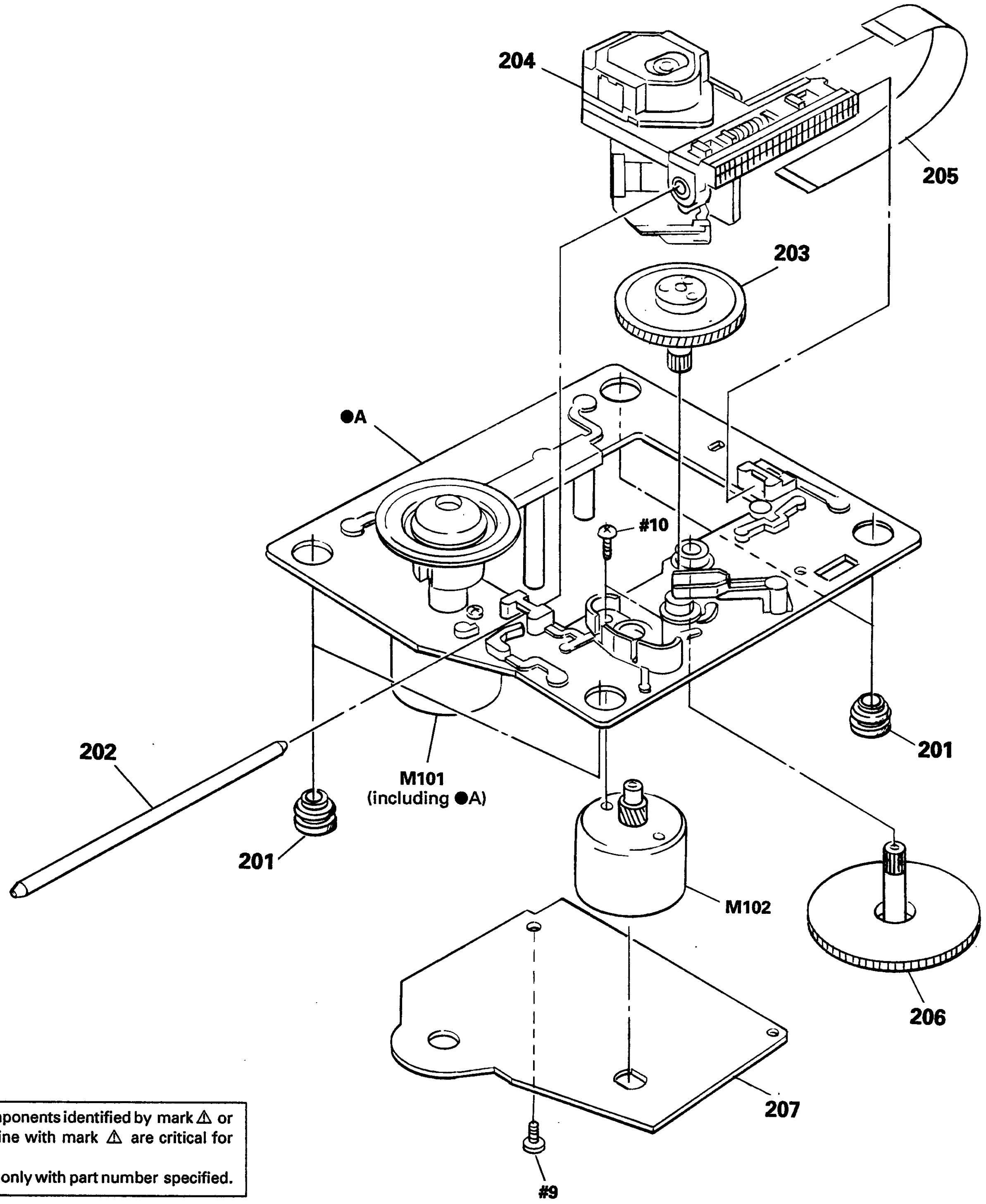
(CDM13BC-5BD4 and CDM13BC-5BD4A)


#1
151
#1
153
155
152
154
156
158
#8
157
#7
159
#1
160
162
M291
163
166
167
164
167
165
#7
161
#6
BU-5BD4
or
BU-5BD4A
169
168
169
169
169
170

Ref. No.	Part No.	Description	Remarks
151	A-4604-752-A	HOLDER (MG) ASSY	
152	4-929-764-01	SHAFT (TABLE GUIDE)	
153	4-944-006-01	BEARING	
* 154	4-917-583-21	BRACKET, YOKE	
155	X-4941-462-1	CHASSIS (MD) ASSY	
156	4-927-628-01	GEAR (C)	
157	4-927-620-01	GEAR (P)	
158	4-927-649-01	BELT	
159	4-929-724-01	PULLEY (B)	
160	X-4929-703-1	ARM ASSY, SWING	
161	4-944-012-01	TABLE, DISC	
162	4-929-727-01	CAM (A)	
163	4-929-729-01	CAM (B)	
164	3-659-338-00	SPRING, COMPRESSION	
165	4-927-654-01	WASHER (LIMITER)	
* 166	1-638-308-11	LOADING BOARD	
167	4-933-134-01	SCREW (+PTPWH M2.6X6)	
168	1-590-530-11	WIRE, FLAT TYPE (5 CORE)	
169	4-917-541-01	SPRING (B)	
170	4-929-747-01	HOLDER (BU)	
M291	A-4608-362-A	MOTOR (L) ASSY (LOADING)	

6-4. CD MECHANISM SECTION 2

(BU-5BD4 and BU-5BD4A)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
201	4-933-126-01	INSULATOR (A)	
202	4-917-565-01	SHAFT, SLED	
203	4-917-567-01	GEAR (M)	
⚠204	8-848-144-11	DEVICE, OPTICAL KSS-240A	
205	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
206	4-917-564-01	GEAR (P), FLATNESS	
* 207	A-4617-936-A	BD BOARD, COMPLETE (CDM13BC-5BD4, BU-5BD4 USED)	
* 207	A-4617-759-A	BD BOARD, COMPLETE (CDM13BC-5BD4A, BU-5BD4A USED)	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- G : Germany Model
- AUS : Australian Model
- EA : Saudi Arabia Model
- EE : East European Model

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description			Remarks
*	A-4617-759-A	BD(A) BOARD, COMPLETE (CDM13B-5BD4, ********************* BU-5BD4 USED)			
		< CAPACITOR >			
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C102	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C103	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C104	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C105	1-126-607-11	ELECT CHIP	47uF	20%	4V
C106	1-126-607-11	ELECT CHIP	47uF	20%	4V
C107	1-126-607-11	ELECT CHIP	47uF	20%	4V
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C111	1-164-346-11	CERAMIC CHIP	1uF		16V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C114	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C115	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C117	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C118	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C119	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C120	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C151	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C152	1-164-346-11	CERAMIC CHIP	1uF		16V
C153	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C154	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C155	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C171	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C172	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C173	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C174	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C201	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C202	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C203	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C204	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C205	1-164-346-11	CERAMIC CHIP	1uF		16V
C206	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C207	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C208	1-164-346-11	CERAMIC CHIP	1uF		16V
C209	1-164-346-11	CERAMIC CHIP	1uF		16V
C210	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C301	1-164-346-11	CERAMIC CHIP	1uF		16V
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C305	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C306	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C307	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C308	1-164-346-11	CERAMIC CHIP	1uF		16V
C309	1-164-346-11	CERAMIC CHIP	1uF		16V
C310	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C311	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C312	1-164-346-11	CERAMIC CHIP	1uF		16V
C401	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C402	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-580-858-11	SOCKET, CONNECTOR (SMT) 5P			
CN102	1-580-866-11	SOCKET, CONNECTOR (SMT) 12P			
CN103	1-580-872-41	SOCKET, CONNECTOR (SMT) 19P			
		< DIODE >			
D101	8-719-422-12	DIODE	MA8039		
D201	8-719-988-62	DIODE	1SS355		
		< IC >			
IC101	8-752-053-73	IC	CXA1372AQ		
IC102	8-759-823-48	IC	LA6525M		
IC103	8-759-636-20	IC	M54641FP		
IC201	8-752-340-37	IC	CXD2505Q		
IC202	8-759-059-86	IC	uPD75116GF-F21-3BE		
IC301	8-759-506-63	IC	PCM67U		
IC302	8-759-996-43	IC	RC4558PS		
		< TRANSISTOR >			
Q101	8-729-805-45	TRANSISTOR	2SC3395		

BD(A) BD

Ref. No.	Part No.	Description	Remarks
Q201	8-729-602-21	TRANSISTOR 2SC4154-F	
		< RESISTOR >	
R101	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R102	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R103	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R104	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R105	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R107	1-216-114-00	METAL GLAZE 510K 5% 1/10W	
R108	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R109	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R110	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R111	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R112	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R113	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R114	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R152	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R153	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R154	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R155	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R156	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R157	1-236-427-11	NETWORK, RES 18K	
R159	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R160	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R171	1-216-001-00	METAL CHIP 10 5% 1/10W	
R172	1-216-001-00	METAL CHIP 10 5% 1/10W	
R173	1-216-001-00	METAL CHIP 10 5% 1/10W	
R174	1-216-001-00	METAL CHIP 10 5% 1/10W	
R201	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R203	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R204	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R205	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R209	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R210	1-236-427-11	NETWORK, RES 18K	
R212	1-236-427-11	NETWORK, RES 18K	
R214	1-239-039-11	RESISTOR, NETWORK (1608) 22K	
R215	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R218	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R219	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R220	1-216-001-00	METAL CHIP 10 5% 1/10W	
R222	1-236-427-11	NETWORK, RES 18K	
R223	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R224	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R225	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R226	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R301	1-236-413-11	NETWORK, RES 1.2K	
R303	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R304	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R305	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R306	1-216-097-00	METAL CHIP 100K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV101	1-241-395-11	RES, ADJ, METAL GLAZE 10K(TRACKING GAIN)	
RV102	1-241-395-11	RES, ADJ, METAL GLAZE 10K(FOCUS GAIN)	
		< SWITCH >	
SW101	1-572-085-11	SWITCH, LEAF (LIMIT)	
		< CRYSTAL >	
X101	1-579-280-11	VIBRATOR, CRYSTAL (6.9344MHz)	
X202	1-579-216-11	VIBRATOR, CERAMIC (4MHz)	
**			
*	A-4617-936-A	BD BOARD, COMPLETE (CDM13BC-5BD4A, ****************** BU-5BD4A USED)	
		< CAPACITOR >	
C101	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C102	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C103	1-135-155-21	TANTALUM CHIP 4.7uF 10% 16V	
C104	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C105	1-126-607-11	ELECT CHIP 47uF 20% 4V	
C106	1-126-607-11	ELECT CHIP 47uF 20% 4V	
C107	1-126-607-11	ELECT CHIP 47uF 20% 4V	
C108	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C109	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C110	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C111	1-164-346-11	CERAMIC CHIP 1uF 16V	
C112	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C113	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C114	1-164-695-11	CERAMIC CHIP 0.0022uF 5% 50V	
C115	1-164-695-11	CERAMIC CHIP 0.0022uF 5% 50V	
C117	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C118	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C119	1-164-695-11	CERAMIC CHIP 0.0022uF 5% 50V	
C120	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C151	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C152	1-164-346-11	CERAMIC CHIP 1uF 16V	
C153	1-163-135-00	CERAMIC CHIP 560PF 5% 50V	
C154	1-164-695-11	CERAMIC CHIP 0.0022uF 5% 50V	
C155	1-163-023-00	CERAMIC CHIP 0.015uF 5% 50V	
C171	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C172	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C173	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C174	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C201	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remarks
C202	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C203	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C204	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C205	1-164-346-11	CERAMIC CHIP	1uF		16V
C206	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C207	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C208	1-164-346-11	CERAMIC CHIP	1uF		16V
C209	1-164-346-11	CERAMIC CHIP	1uF		16V
C210	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C299	1-164-346-11	CERAMIC CHIP	1uF		16V
C301	1-164-346-11	CERAMIC CHIP	1uF		16V
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C305	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C306	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C307	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C308	1-164-346-11	CERAMIC CHIP	1uF		16V
C309	1-164-346-11	CERAMIC CHIP	1uF		16V
C310	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C311	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C312	1-164-346-11	CERAMIC CHIP	1uF		16V
C401	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CN101	1-580-858-11	SOCKET, CONNECTOR (SMT) 5P			
CN102	1-580-866-11	SOCKET, CONNECTOR (SMT) 12P			
CN103	1-580-872-41	SOCKET, CONNECTOR (SMT) 19P			
		< DIODE >			
D101	8-719-422-12	DIODE	MA8039		
D201	8-719-988-62	DIODE	1SS355		
		< IC >			
IC101	8-752-053-73	IC	CXA1372AQ		
IC102	8-759-823-48	IC	LA6525M		
IC103	8-759-636-20	IC	M54641FP		
IC201	8-752-337-26	IC	CXD2500AQ		
IC202	8-759-059-86	IC	uPD75116GF-F21-3BE		
IC203	8-752-337-10	IC	CXD2554M		
IC301	8-759-506-63	IC	PCM67U		
IC302	8-759-996-43	IC	RC4558PS		
		< TRANSISTOR >			
Q101	8-729-805-45	TRANSISTOR	2SC3395		
Q201	8-729-602-21	TRANSISTOR	2SC4154-F		
		< RESISTOR >			
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W
R103	1-216-091-00	METAL CHIP	56K	5%	1/10W
R104	1-216-099-00	METAL CHIP	120K	5%	1/10W
R105	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R108	1-216-105-00	METAL CHIP	220K	5%	1/10W
R109	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R110	1-216-049-00	METAL CHIP	1K	5%	1/10W
R111	1-216-049-00	METAL CHIP	1K	5%	1/10W
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W
R113	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R114	1-216-105-00	METAL CHIP	220K	5%	1/10W
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W
R154	1-216-085-00	METAL CHIP	33K	5%	1/10W
R155	1-216-093-00	METAL CHIP	68K	5%	1/10W
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W
R157	1-236-427-11	NETWORK, RES	18K		
R159	1-216-079-00	METAL CHIP	18K	5%	1/10W
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W
R171	1-216-001-00	METAL CHIP	10	5%	1/10W
R172	1-216-001-00	METAL CHIP	10	5%	1/10W
R173	1-216-001-00	METAL CHIP	10	5%	1/10W
R174	1-216-001-00	METAL CHIP	10	5%	1/10W
R201	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R202	1-216-073-00	METAL CHIP	10K	5%	1/10W
R203	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R204	1-216-073-00	METAL CHIP	10K	5%	1/10W
R205	1-216-097-00	METAL CHIP	100K	5%	1/10W
R208	1-216-033-00	METAL CHIP	220	5%	1/10W
R209	1-216-081-00	METAL CHIP	22K	5%	1/10W
R210	1-236-427-11	NETWORK, RES	18K		
R212	1-236-427-11	NETWORK, RES	18K		
R214	1-239-039-11	RESISTOR, NETWORK (1608) 22K			
R218	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R219	1-216-073-00	METAL CHIP	10K	5%	1/10W
R220	1-216-001-00	METAL CHIP	10	5%	1/10W
R222	1-236-427-11	NETWORK, RES	18K		
R223	1-216-081-00	METAL CHIP	22K	5%	1/10W
R224	1-216-081-00	METAL CHIP	22K	5%	1/10W
R225	1-216-081-00	METAL CHIP	22K	5%	1/10W
R226	1-216-081-00	METAL CHIP	22K	5%	1/10W
R230	1-236-413-11	NETWORK, RES	1.2K		
R231	1-236-413-11	NETWORK, RES	1.2K		
R232	1-216-041-00	METAL CHIP	470	5%	1/10W
R233	1-216-041-00	METAL CHIP	470	5%	1/10W
R301	1-236-413-11	NETWORK, RES	1.2K		
R303	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R304	1-216-055-00	METAL CHIP	1.8K	5%	1/10W

When indicating parts by reference number, please include the board name.

BD LOADING MAIN

Ref. No.	Part No.	Description	Remarks
R305	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R306	1-216-097-00	METAL CHIP 100K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV101	1-241-395-11	RES, ADJ, METAL GLAZE 10K(TRACKING GAIN)	
RV102	1-241-395-11	RES, ADJ, METAL GLAZE 10K(FOCUS GAIN)	
		< SWITCH >	
SW101	1-572-085-11	SWITCH, LEAF (LIMIT)	
		< CRYSTAL >	
X201	1-579-280-11	VIBRATOR, CRYSTAL (16MHz)	
X202	1-579-216-11	VIBRATOR, CERAMIC (4MHz)	
		**	
*	1-638-308-11	LOADING BOARD	
		*************	
		< CONNECTOR >	
CN201	1-580-918-11	HOUSING, CONNECTOR 5P	
		< SWITCH >	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	
		**	
*	A-4347-105-A	MAIN BOARD, COMPLETE	(AEP, EE)
*	A-4347-106-A	MAIN BOARD, COMPLETE	(G)
*	A-4347-107-A	MAIN BOARD, COMPLETE	(E)
*	A-4347-709-A	MAIN BOARD, COMPLETE	(UK)
*	A-4356-043-A	MAIN BOARD, COMPLETE	(EA)
*	A-4356-226-A	MAIN BOARD, COMPLETE	(AUS)
		********************	
		< CAPACITOR >	
C001	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
C002	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C003	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C004	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C006	1-163-038-00	CERAMIC CHIP 0.1uF 25V	(G, EA)
C007	1-163-038-00	CERAMIC CHIP 0.1uF 25V	(EA)
C101	1-164-346-11	CERAMIC CHIP 1uF 16V	(EXCEPT E, EA)
C102	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(EXCEPT E, EA)
C103	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	(EXCEPT E, EA)
C104	1-124-927-11	ELECT 4.7uF 20% 100V	(EXCEPT E, EA)
C105	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	(EXCEPT E, EA)
C106	1-163-018-00	CERAMIC CHIP 0.0056uF 5% 50V	(EXCEPT E, EA)
C107	1-163-081-00	CERAMIC CHIP 0.22uF 25V	(AEP, UK, AUS, EE)
C107	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	(G)
C108	1-124-443-00	ELECT 100uF 20% 10V	(EXCEPT E, EA)
C130	1-124-927-11	ELECT 4.7uF 20% 100V	
C131	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C132	1-124-927-11	ELECT 4.7uF 20% 100V	
C133	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C134	1-124-927-11	ELECT 4.7uF 20% 100V	
C135	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C136	1-124-927-11	ELECT 4.7uF 20% 100V	
C137	1-124-927-11	ELECT 4.7uF 20% 100V	
C141	1-164-222-11	CERAMIC CHIP 0.22uF 25V	
C142	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C143	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C144	1-163-024-00	CERAMIC CHIP 0.018uF 10% 50V	
C145	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C146	1-163-014-00	CERAMIC CHIP 0.0027uF 10% 50V	
C147	1-163-010-11	CERAMIC CHIP 0.0012uF 10% 50V	
C148	1-164-222-11	CERAMIC CHIP 0.22uF 25V	
C151	1-164-492-11	CERAMIC CHIP 0.15uF 10% 16V	
C152	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V	
C153	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C154	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C155	1-163-016-00	CERAMIC CHIP 0.0039uF 10% 50V	
C156	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
C157	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
C158	1-164-492-11	CERAMIC CHIP 0.15uF 10% 16V	
C160	1-124-907-11	ELECT 10uF 20% 50V	
C161	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C162	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C163	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C164	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C165	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C166	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C170	1-124-903-11	ELECT 1uF 20% 50V	
C190	1-163-038-00	CERAMIC CHIP 0.1uF 25V	(E, EA)
C191	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	(E, EA)
C195	1-124-927-11	ELECT 4.7uF 20% 100V	(E, EA)
C198	1-124-925-11	ELECT 2.2uF 20% 100V	
C201	1-164-346-11	CERAMIC CHIP 1uF 16V	(EXCEPT E, EA)
C202	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(EXCEPT E, EA)
C203	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	(EXCEPT E, EA)
C204	1-124-927-11	ELECT 4.7uF 20% 100V	(EXCEPT E, EA)
C205	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	(EXCEPT E, EA)

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description			Remarks
C206	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V (EXCEPT E, EA)
C207	1-163-081-00	CERAMIC CHIP	0.22uF		25V (AEP, UK, AUS, EE)
C207	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V (G)
C208	1-124-443-00	ELECT	100uF	20%	10V (EXCEPT E, EA)
C230	1-124-927-11	ELECT	4.7uF	20%	100V
C231	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C232	1-124-927-11	ELECT	4.7uF	20%	100V
C233	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C234	1-124-927-11	ELECT	4.7uF	20%	100V
C235	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C236	1-124-927-11	ELECT	4.7uF	20%	100V
C237	1-124-927-11	ELECT	4.7uF	20%	100V
C241	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C242	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C243	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C244	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C245	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C246	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C247	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V
C248	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C251	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C252	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C253	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C254	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C255	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C256	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C257	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C258	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C270	1-124-903-11	ELECT	1uF	20%	50V
C290	1-163-038-00	CERAMIC CHIP	0.1uF		25V (E, EA)
C501	1-163-133-00	CERAMIC CHIP	470PF	5%	50V (EXCEPT E, EA)
C502	1-163-125-00	CERAMIC CHIP	220PF	5%	50V (EXCEPT E, EA)
C551	1-163-133-00	CERAMIC CHIP	470PF	5%	50V (EXCEPT E, EA)
C552	1-163-125-00	CERAMIC CHIP	220PF	5%	50V (EXCEPT E, EA)
C777	1-124-472-11	ELECT	470uF	20%	10V (G)
		< CONNECTOR >			
* CN1	1-691-677-11	PIN, CONNECTOR (PC BOARD) 4P			
* CN2	1-691-677-11	PIN, CONNECTOR (PC BOARD) 4P			
* CN5	1-691-677-11	PIN, CONNECTOR (PC BOARD) 4P			
* CN34	1-691-679-11	PIN, CONNECTOR (PC BOARD) 8P			
* CN301	1-573-084-11	CONNECTOR, FPC (NON ZIF) 20P			
* CN302	1-573-084-11	CONNECTOR, FPC (NON ZIF) 20P			
* CN801	1-573-085-11	CONNECTOR, FPC (NON ZIF) 19P			
CNP601	1-573-109-11	PIN, CONNECTOR 15P			

Ref.No.	Part No.	Description			Remarks
CNP602	1-573-109-11	PIN, CONNECTOR 15P			
		< DIODE >			
D100	8-719-988-62	DIODE	1SS355		
D163	8-719-988-62	DIODE	1SS355		
D200	8-719-988-62	DIODE	1SS355		
		< IC >			
IC110	8-759-636-55	IC	M5218AFP		(EXCEPT E, EA)
IC120	8-759-516-47	IC	CD4066BCM		
IC121	8-759-516-41	IC	CD4052BCM		
IC130	8-759-636-57	IC	CXA1492Q		
IC190	8-759-636-55	IC	M5218AFP		(E, EA)
IC191	8-759-516-43	IC	CD4053BCM		
		< JACK >			
J100	1-565-320-61	JACK, PIN 6P(DAT IN/OUT, PHONO)			(EXCEPT E, EA)
J100	1-565-320-61	JACK, PIN 6P(DAT IN/OUT, VIDEO/AUX)			(E, EA)
		< JUMPER RESISTOR >			
JR009	1-216-295-00	METAL CHIP	0	5%	1/10W (EA)
JR1	1-216-295-00	METAL CHIP	0	5%	1/10W
JR4	1-216-296-00	METAL CHIP	0	5%	1/8W
JR5	1-216-295-00	METAL CHIP	0	5%	1/10W
JR6	1-216-296-00	METAL CHIP	0	5%	1/8W
JR7	1-216-295-00	METAL CHIP	0	5%	1/10W (AUS, E, EA)
JR8	1-216-296-00	METAL CHIP	0	5%	1/8W
JR9	1-216-295-00	METAL CHIP	0	5%	1/10W (E, EA)
JR10	1-216-295-00	METAL CHIP	0	5%	1/10W (E, EA)
JR91	1-216-295-00	METAL CHIP	0	5%	1/10W
JR101	1-216-295-00	METAL CHIP	0	5%	1/10W
JR801	1-216-295-00	METAL CHIP	0	5%	1/10W
JR802	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L102	1-408-785-21	INDUCTOR CHIP	47uH	5%	
		< TRANSISTOR >			
Q120	8-729-805-43	TRANSISTOR	2SC3396		
Q121	8-729-805-67	TRANSISTOR	2SA1342		
		< RESISTOR >			
R101	1-216-049-00	METAL CHIP	1K	5%	1/10W (EXCEPT E, EA)
R102	1-216-073-00	METAL CHIP	10K	5%	1/10W (E, EA)
R102	1-216-089-00	METAL CHIP	47K	5%	1/10W (EXCEPT E, EA)
R103	1-216-115-00	METAL CHIP	560K	5%	1/10W (EXCEPT E, EA)
R104	1-216-049-00	METAL CHIP	1K	5%	1/10W (EXCEPT E, EA)

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remarks
R105	1-216-089-00	METAL CHIP 47K 5% 1/10W	(EXCEPT E,EA)
R106	1-216-115-00	METAL CHIP 560K 5% 1/10W	(EXCEPT E,EA)
R107	1-216-041-00	METAL CHIP 470 5% 1/10W	(EXCEPT E,EA)
R108	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT E,EA)
R109	1-216-033-00	METAL CHIP 220 5% 1/10W	(EXCEPT E,EA)
R113	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R114	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R115	1-216-037-00	METAL CHIP 330 5% 1/10W	
R116	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R120	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R122	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R125	1-216-043-00	METAL CHIP 560 5% 1/10W	
R126	1-216-043-00	METAL CHIP 560 5% 1/10W	
R127	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R128	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R129	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R130	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R131	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R132	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R133	1-216-073-00	METAL CHIP 10K 5% 1/10W	(AUS,E,EA)
R134	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R135	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R136	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R137	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R141	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R142	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R143	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R144	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R145	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R146	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R147	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R148	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R163	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R164	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R165	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R170	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R171	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R190	1-216-081-00	METAL CHIP 22K 5% 1/10W	(E,EA)
R191	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E,EA)
R195	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E,EA)
R196	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R197	1-216-081-00	METAL CHIP 22K 5% 1/10W	(EXCEPT E,EA)
R198	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R199	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R201	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT E,EA)
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E,EA)
R202	1-216-089-00	METAL CHIP 47K 5% 1/10W	(EXCEPT E,EA)
R203	1-216-115-00	METAL CHIP 560K 5% 1/10W	(EXCEPT E,EA)
R204	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT E,EA)
R205	1-216-089-00	METAL CHIP 47K 5% 1/10W	(EXCEPT E,EA)
R206	1-216-115-00	METAL CHIP 560K 5% 1/10W	(EXCEPT E,EA)
R207	1-216-041-00	METAL CHIP 470 5% 1/10W	(EXCEPT E,EA)
R208	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT E,EA)
R209	1-216-033-00	METAL CHIP 220 5% 1/10W	(EXCEPT E,EA)
R213	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R214	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R215	1-216-037-00	METAL CHIP 330 5% 1/10W	
R216	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R225	1-216-043-00	METAL CHIP 560 5% 1/10W	
R226	1-216-043-00	METAL CHIP 560 5% 1/10W	
R227	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R228	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R229	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R230	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R231	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R232	1-216-084-00	METAL CHIP 30K 5% 1/10W	
R233	1-216-073-00	METAL CHIP 10K 5% 1/10W	(AUS,E,EA)
R234	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R235	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R236	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R237	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R241	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R242	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R243	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R244	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R245	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R246	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R247	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R248	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R270	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R271	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R290	1-216-081-00	METAL CHIP 22K 5% 1/10W	(E,EA)
R296	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R297	1-216-081-00	METAL CHIP 22K 5% 1/10W	(EXCEPT E,EA)
R501	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT E,EA)
R501	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	(E,EA)
R551	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT E,EA)
R551	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	(E,EA)

< TERMINAL >

Ref. No.	Part No.	Description	Remarks
* TB701	1-537-138-31	TERMINAL BOARD(ANT)(FM/AM ANTENNA)	(EXCEPT E,EA)
* TB701	1-537-238-21	TERMINAL BOARD(ANT)(FM/AM ANTENNA)	(E,EA)

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When indicating parts by reference number, please include the board name.

PANEL

Ref. No.	Part No.	Description			Remarks
*	A-4347-098-A	PANEL BOARD, COMPLETE (AEP)			
*	A-4347-099-A	PANEL BOARD, COMPLETE (UK)			
*	A-4347-102-A	PANEL BOARD, COMPLETE (E)			
*	A-4356-042-A	PANEL BOARD, COMPLETE (EA)			
*	A-4356-040-A	PANEL BOARD, COMPLETE (EE)			
*	A-4356-051-A	PANEL BOARD, COMPLETE (AUS)			
*	A-4347-100-A	PANEL BOARD, COMPLETE (G)			

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< CAPACITOR >

C300	1-125-486-11	DOUBLE LAYERS	0.22F		5.5V
C301	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C302	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C303	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C304	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C305	1-126-177-11	ELECT	100uF	20%	10V
C308	1-126-157-11	ELECT	10uF	20%	16V
C309	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C311	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C312	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C360	1-126-177-11	ELECT	100uF	20%	10V
C361	1-126-177-11	ELECT	100uF	20%	10V
C362	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C370	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C371	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C372	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C373	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C374	1-124-483-61	ELECT	47uF	20%	35V
C381	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C382	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C390	1-126-157-11	ELECT	10uF	20%	16V
C391	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C392	1-164-346-11	CERAMIC CHIP	1uF		16V
C393	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C398	1-163-125-00	CERAMIC CHIP	220PF	5%	50V

< CONNECTOR >

* CN01	1-561-651-00	SOCKET, CONNECTOR 7P	
* CN301	1-573-084-11	CONNECTOR, FPC (NON ZIF) 20P	
* CN302	1-573-084-11	CONNECTOR, FPC (NON ZIF) 20P	

< DIODE >

D301	8-719-988-62	DIODE	1SS355
D302	8-719-988-62	DIODE	1SS355
D303	8-719-988-62	DIODE	1SS355
D304	8-719-988-62	DIODE	1SS355
D311	8-719-988-62	DIODE	1SS355
D312	8-719-988-62	DIODE	1SS355
D331	8-719-301-37	LED	SEL2210S-CD (DISCO/1)
D332	8-719-301-37	LED	SEL2210S-CD (POPS/2)
D333	8-719-301-37	LED	SEL2210S-CD (CLASSIC/3)
D334	8-719-301-37	LED	SEL2210S-CD (WM/4)
D335	8-719-301-37	LED	SEL2210S-CD (CAR/5)
D336	8-719-301-37	LED	SEL2210S-CD (TUNING)
D337	8-719-301-37	LED	SEL2210S-CD (PRESET)
D360	8-719-105-91	DIODE	RD5.6M-B2
D361	8-719-105-91	DIODE	RD5.6M-B2
D390	8-719-988-62	DIODE	1SS355
D391	8-719-988-62	DIODE	1SS355

< FILTER >

FL301	1-519-730-11	INDICATOR TUBE, FLUORESCENT

< IC >

IC301	8-759-073-13	IC	uPD78012GC-503-AB8
IC302	8-759-500-31	IC	X24C01P
IC303	8-749-922-36	IC	GP1U50XB
IC304	8-759-927-29	IC	SN74HCU04ANS
IC305	8-759-991-11	IC	XR1091DCP
IC306	8-759-516-41	IC	CD4052BCM
IC307	8-759-512-44	IC	SN755703
IC308	8-759-512-44	IC	SN755703
IC309	8-759-056-81	IC	M66312FP

< JUMPER RESISTOR >

JR100	1-216-296-00	METAL CHIP	0	5%	1/8W
JR102	1-216-296-00	METAL CHIP	0	5%	1/8W
JR103	1-216-295-00	METAL CHIP	0	5%	1/10W
JR104	1-216-296-00	METAL CHIP	0	5%	1/8W
JR105	1-216-296-00	METAL CHIP	0	5%	1/8W
JR106	1-216-296-00	METAL CHIP	0	5%	1/8W
JR107	1-216-296-00	METAL CHIP	0	5%	1/8W
JR108	1-216-296-00	METAL CHIP	0	5%	1/8W

< TRANSISTOR >

Q301	8-729-810-28	TRANSISTOR	2SC4398
Q390	8-729-602-21	TRANSISTOR	2SC4154-F

< RESISTOR >

R300	1-216-025-00	METAL CHIP	100	5%	1/10W
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W
R303	1-216-073-00	METAL CHIP	10K	5%	1/10W
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W
R306	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W
R308	1-216-001-00	METAL CHIP	10	5%	1/10W
R310	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R311	1-216-097-00	METAL CHIP	100K	5%	1/10W

When indicating parts by reference number, please include the board name.

PANEL

Ref.No.	Part No.	Description	Remarks
R312	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R313	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	(AEP,UK,G)
R313	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(AUS)
R313	1-216-041-00	METAL CHIP 470 5% 1/10W	(E,EA)
R313	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	(EE)
R315	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R321	1-216-041-00	METAL CHIP 470 5% 1/10W	
R322	1-216-041-00	METAL CHIP 470 5% 1/10W	
R323	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R324	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R325	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R326	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R327	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R328	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R329	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R330	1-216-041-00	METAL CHIP 470 5% 1/10W	
R331	1-216-045-00	METAL CHIP 680 5% 1/10W	
R332	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R333	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R334	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R335	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R336	1-216-076-00	METAL CHIP 13K 5% 1/10W	
R337	1-216-041-00	METAL CHIP 470 5% 1/10W	
R338	1-216-045-00	METAL CHIP 680 5% 1/10W	
R339	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R340	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R341	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R342	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R343	1-216-076-00	METAL CHIP 13K 5% 1/10W	
R344	1-216-041-00	METAL CHIP 470 5% 1/10W	
R345	1-216-045-00	METAL CHIP 680 5% 1/10W	
R346	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R347	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R348	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R349	1-216-041-00	METAL CHIP 470 5% 1/10W	
R350	1-216-045-00	METAL CHIP 680 5% 1/10W	
R351	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R352	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R360	1-216-017-00	METAL CHIP 47 5% 1/10W	
R361	1-216-017-00	METAL CHIP 47 5% 1/10W	
R362	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R363	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R364	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R365	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R366	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R381	1-216-037-00	METAL CHIP 330 5% 1/10W	
R382	1-216-037-00	METAL CHIP 330 5% 1/10W	
R383	1-216-037-00	METAL CHIP 330 5% 1/10W	
R384	1-216-037-00	METAL CHIP 330 5% 1/10W	
R385	1-216-037-00	METAL CHIP 330 5% 1/10W	
R386	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R387	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R388	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R389	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R391	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R392	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R393	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R394	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R395	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R399A	1-216-025-00	METAL CHIP 100 5% 1/10W	
R399B	1-216-097-00	METAL CHIP 100K 5% 1/10W	

< SWITCH >

Ref.No.	Part No.	Description	Remarks
S330	1-554-303-21	SWITCH, TACTILE (TUNING MODE)	
S331	1-554-303-21	SWITCH, TACTILE (+)	
S332	1-554-303-21	SWITCH, TACTILE (BAND)	
S333	1-554-303-21	SWITCH, TACTILE (-)	
S334	1-554-303-21	SWITCH, TACTILE (FUNCTION)	
S335	1-554-303-21	SWITCH, TACTILE (-)	
S336	1-554-303-21	SWITCH, TACTILE (PRESET)	
S337	1-554-303-21	SWITCH, TACTILE (+)	
S338	1-554-303-21	SWITCH, TACTILE (SYSTEM POWER)	
S339	1-554-303-21	SWITCH, TACTILE (▷ǁ)	
S340	1-554-303-21	SWITCH, TACTILE (■)	
S341	1-554-303-21	SWITCH, TACTILE (▶▶ ▶▶❙)	
S342	1-554-303-21	SWITCH, TACTILE (❙◀◀ ◀◀)	
S343	1-554-303-21	SWITCH, TACTILE (CLOCK SET WAKE UP 2)	
S344	1-554-303-21	SWITCH, TACTILE (TIMER REC)	
S345	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S346	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S347	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S348	1-554-303-21	SWITCH, TACTILE (STEREO/MONO)	
S349	1-554-303-21	SWITCH, TACTILE (CLOCK SET WAKE UP 1)	
S350	1-554-303-21	SWITCH, TACTILE (KARAOKE PON)	(E,EA,EE)
S351	1-554-303-21	SWITCH, TACTILE (MEMORY/NEXT)	
S352	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)	
S353	1-554-303-21	SWITCH, TACTILE (CHECK)	
S354	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)	
S355	1-554-303-21	SWITCH, TACTILE (DIRECT)	
S356	1-554-303-21	SWITCH, TACTILE (WAKE UP VOL SET)	

< CRYSTAL >

Ref.No.	Part No.	Description	Remarks
X301	1-567-098-00	OSCILLATOR, CRYSTAL (32.768kHz)	
X302	1-579-600-11	VIBRATOR, CERAMIC (8.388MHz)	

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When indicating parts by reference number, please include the board name.

VR **POWER AMP**

Ref. No.	Part No.	Description	Remarks
*	1-643-251-11	VR BOARD ********	
		< CAPACITOR >	
C394	1-124-261-00	ELECT 10uF 20% 50V	
C395	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
		< CONNECTOR >	
CN311	1-573-712-11	CONNECTOR, BOARD TO BOARD 8P	
CNP310	1-569-132-11	PIN, CONNECTOR 7P	
		< IC >	
IC310	8-759-820-62	IC LB1639	
		< RESISTOR >	
R368	1-216-033-00	METAL CHIP 220 5% 1/10W	
R369	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV361	1-241-803-11	RES, VAR, CARBON(WITH MOTOR) 10K	(VOLUME)
**			
*	A-4347-088-A	POWER AMP BOARD, COMPLETE	(EXCEPT UK, G)
*	A-4347-710-A	POWER AMP BOARD, COMPLETE	(UK)
*	A-4347-089-A	POWER AMP BOARD, COMPLETE *****************************	(G)
		< CAPACITOR >	
C601	1-124-927-11	ELECT 4.7uF 20% 100V	
C602	1-162-289-31	CERAMIC 390PF 10% 50V	
C603	1-126-233-11	ELECT 22uF 20% 50V	
C604	1-162-290-31	CERAMIC 470PF 10% 50V	
C606	1-124-910-11	ELECT 47uF 20% 50V	
C607	1-124-122-11	ELECT 100uF 20% 50V	
C608	1-124-122-11	ELECT 100uF 20% 50V	
C609	1-126-233-11	ELECT 22uF 20% 50V	
C610	1-136-163-00	FILM 0.068uF 5% 50V	
C616	1-126-233-11	ELECT 22uF 20% 50V	
C617	1-136-165-00	FILM 0.1uF 5% 50V	
C618	1-136-163-00	FILM 0.068uF 5% 50V	(EXCEPT G)
C618	1-136-165-00	FILM 0.1uF 5% 50V	(G)
C619	1-136-161-00	FILM 0.047uF 5% 50V	
C620	1-136-163-00	FILM 0.068uF 5% 50V	
C621	1-124-910-11	ELECT 47uF 20% 50V	
C651	1-124-927-11	ELECT 4.7uF 20% 100V	
C652	1-162-289-31	CERAMIC 390PF 10% 50V	
C653	1-126-233-11	ELECT 22uF 20% 50V	
C654	1-162-290-31	CERAMIC 470PF 10% 50V	
C656	1-124-910-11	ELECT 47uF 20% 50V	
C660	1-136-163-00	FILM 0.068uF 5% 50V	
C666	1-126-233-11	ELECT 22uF 20% 50V	
C668	1-136-163-00	FILM 0.068uF 5% 50V	(EXCEPT G)
C668	1-136-165-00	FILM 0.1uF 5% 50V	(G)
C670	1-136-163-00	FILM 0.068uF 5% 50V	
C690	1-126-176-11	ELECT 220uF 20% 10V	
C695	1-164-159-11	CERAMIC 0.1uF 50V	
C696	1-164-159-11	CERAMIC 0.1uF 50V	
C750	1-124-893-11	ELECT 2200uF 20% 10V	(EXCEPT G)
C750	1-124-473-11	ELECT 1000uF 20% 10V	(G)
C929	1-124-910-11	ELECT 47uF 20% 50V	
C931	1-124-910-11	ELECT 47uF 20% 50V	
C970	1-124-907-11	ELECT 10uF 20% 50V	
C971	1-124-477-11	ELECT 47uF 20% 25V	
		< CIRCUIT BREAKER >	
CB601	1-532-564-00	BREAKER, CIRCUIT	
CB651	1-532-564-00	BREAKER, CIRCUIT	
		< CONNECTOR >	
CN601	1-573-095-11	SOCKET, CONNECTOR 15P	
CN602	1-573-095-11	SOCKET, CONNECTOR 15P	
CN603	1-573-095-11	SOCKET, CONNECTOR 15P	
CN604	1-573-095-11	SOCKET, CONNECTOR 15P	
* CN605	1-566-859-11	SOCKET, CONNECTOR 15P	(SYSTEM CONTROL)
		< DIODE >	
D621	8-719-987-63	DIODE 1N4148M	
D924	8-719-002-67	DIODE UZL-33H	
		< IC >	
⚠IC601	8-749-920-13	IC STK4132MK2	
		< COIL >	
L601	1-420-872-00	COIL, AIR CORE 1.9uH	
L651	1-420-872-00	COIL, AIR CORE 1.9uH	
		< TRANSISTOR >	
Q601	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q602	8-729-900-80	TRANSISTOR DTC114ES	
Q624	8-729-900-80	TRANSISTOR DTC114ES	
Q651	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q920	8-729-209-15	TRANSISTOR 2SD2012	
		< RESISTOR >	
R601	1-249-417-11	CARBON 1K 5% 1/4W	
R602	1-249-438-11	CARBON 56K 5% 1/4W	
R603	1-249-411-11	CARBON 330 5% 1/4W	
R604	1-249-434-11	CARBON 27K 5% 1/4W	(EXCEPT G)
R604	1-249-432-11	CARBON 18K 5% 1/4W	(G)

**The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.**

When indicating parts by reference number, please include the board name.

POWER AMP | POWER SUPPLY

Ref. No.	Part No.	Description				Remarks
R605	1-247-756-11	CARBON	2.2K	5%	1/2W	
R606	1-247-756-11	CARBON	2.2K	5%	1/2W	
⚠R607	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R608	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R610	1-247-752-11	CARBON	1K	5%	1/2W	
R611	1-247-752-11	CARBON	1K	5%	1/2W	
R612	1-247-727-11	CARBON	10	5%	1/2W	
R621	1-249-437-11	CARBON	47K	5%	1/4W	
R622	1-249-429-11	CARBON	10K	5%	1/4W	
R623	1-247-881-00	CARBON	120K	5%	1/4W	
R624	1-249-417-11	CARBON	1K	5%	1/4W	
R625	1-249-439-11	CARBON	68K	5%	1/4W	
R630	1-247-727-11	CARBON	10	5%	1/2W	
R631	1-249-434-11	CARBON	27K	5%	1/4W	
R651	1-249-417-11	CARBON	1K	5%	1/4W	
R652	1-249-438-11	CARBON	56K	5%	1/4W	
R653	1-249-411-11	CARBON	330	5%	1/4W	
R654	1-249-434-11	CARBON	27K	5%	1/4W	(EXCEPT G)
R654	1-249-432-11	CARBON	18K	5%	1/4W	(G)
R655	1-247-756-11	CARBON	2.2K	5%	1/2W	
R656	1-247-756-11	CARBON	2.2K	5%	1/2W	
R662	1-247-727-11	CARBON	10	5%	1/2W	
R680	1-247-727-11	CARBON	10	5%	1/2W	
R681	1-249-434-11	CARBON	27K	5%	1/4W	
R690	1-249-417-11	CARBON	1K	5%	1/4W	
R691	1-249-417-11	CARBON	1K	5%	1/4W	
R692	1-249-422-11	CARBON	2.7K	5%	1/4W	
R693	1-249-429-11	CARBON	10K	5%	1/4W	
R921	1-249-423-11	CARBON	3.3K	5%	1/4W	

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*	A-4347-712-A	POWER SUPPLY BOARD, COMPLETE (AEP, EE)
*	A-4347-711-A	POWER SUPPLY BOARD, COMPLETE (UK)
*	A-4347-085-A	POWER SUPPLY BOARD, COMPLETE (G)
*	A-4356-044-A	POWER SUPPLY BOARD, COMPLETE (AUS, E)
*	A-4347-083-A	POWER SUPPLY BOARD, COMPLETE (EA)

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< CAPACITOR >

Ref. No.	Part No.	Description				Remarks
C401	1-136-169-00	FILM	0.22uF	5%	50V	(AUS, E, EA)
C402	1-162-282-31	CERAMIC	100PF	10%	50V	(AUS, E, EA)
C403	1-162-286-31	CERAMIC	220PF	10%	50V	(AUS, E, EA)
C404	1-124-927-11	ELECT	4.7uF	20%	100V	(AUS, E, EA)
C405	1-124-927-11	ELECT	4.7uF	20%	100V	(AUS, E, EA)
C406	1-162-284-31	CERAMIC	150PF	10%	50V	(AUS, E, EA)
C407	1-124-927-11	ELECT	4.7uF	20%	100V	(AUS, E, EA)
C408	1-124-477-11	ELECT	47uF	20%	25V	(AUS, E, EA)
C409	1-124-477-11	ELECT	47uF	20%	25V	(AUS, E, EA)
C410	1-162-290-11	CERAMIC	470PF	10%	50V	(AUS, E, EA)
C411	1-162-290-11	CERAMIC	470PF	10%	50V	(AUS, E, EA)
C420	1-162-282-11	CERAMIC	100PF	10%	50V	(AUS, E, EA)
C421	1-162-282-11	CERAMIC	100PF	10%	50V	(AUS, E, EA)
C631	1-136-165-00	FILM	0.1uF	5%	50V	
C900	1-102-394-11	CERAMIC	0.01uF		250V	
C901	1-126-256-11	ELECT	4700uF	20%	35V	
C902	1-126-256-11	ELECT	4700uF	20%	35V	
C903	1-102-394-11	CERAMIC	0.01uF		250V	
C904	1-124-887-00	ELECT	3300uF	20%	16V	
C905	1-124-887-00	ELECT	3300uF	20%	16V	
C907	1-124-903-11	ELECT	1uF	20%	50V	
C910	1-124-907-11	ELECT	10uF	20%	50V	
C911	1-124-925-11	ELECT	2.2uF	20%	100V	
C912	1-124-473-11	ELECT	1000uF	20%	10V	(AEP, UK, G, EE)
C912	1-124-472-11	ELECT	470uF	20%	10V	(AUS, E, EA)
C913	1-124-473-11	ELECT	1000uF	20%	10V	(AEP, UK, G, EE)
C913	1-124-472-11	ELECT	470uF	20%	10V	(AUS, E, EA)
C914	1-124-907-11	ELECT	10uF	20%	50V	
C915	1-124-478-11	ELECT	100uF	20%	25V	
C917	1-124-907-11	ELECT	10uF	20%	50V	
C918	1-124-477-11	ELECT	47uF	20%	25V	
C919	1-124-903-11	ELECT	1uF	20%	50V	
C920	1-124-443-00	ELECT	100uF	20%	10V	
C921	1-124-903-11	ELECT	1uF	20%	50V	
C922	1-124-478-11	ELECT	100uF	20%	25V	
C923	1-124-478-11	ELECT	100uF	20%	25V	
C924	1-124-907-11	ELECT	10uF	20%	50V	
C925	1-124-465-00	ELECT	0.47uF	20%	50V	
C926	1-124-572-11	ELECT	100uF	20%	63V	
C927	1-124-907-11	ELECT	10uF	20%	50V	
C928	1-124-907-11	ELECT	10uF	20%	50V	
C935	1-136-165-00	FILM	0.1uF	5%	50V	
C936	1-136-165-00	FILM	0.1uF	5%	50V	

< CONNECTOR >

Ref. No.	Part No.	Description
CN901	1-573-109-11	PIN, CONNECTOR 15P
CN902	1-573-109-11	PIN, CONNECTOR 15P
* CN903	1-569-505-11	PIN, CONNECTOR 10P (E, EA)
CN903	1-691-911-11	HOUSING, CONNECTOR (PC BOARD) 10P (EXCEPT E, EA)

< DIODE >

Ref. No.	Part No.	Description	
D900	8-719-312-09	DIODE	RBA-402
D901	8-719-200-82	DIODE	11ES2
D902	8-719-200-82	DIODE	11ES2
D903	8-719-200-82	DIODE	11ES2
D904	8-719-200-82	DIODE	11ES2
D905	8-719-987-63	DIODE	1N4148M
D906	8-719-987-63	DIODE	1N4148M
D916	8-719-000-60	DIODE	UZL-6M2
D922	8-719-200-82	DIODE	11ES2
D923	8-719-200-82	DIODE	11ES2

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

POWER SUPPLY

TRANSFORMER

Ref. No.	Part No.	Description	Remarks
		< FUSE >	
⚠F903	1-532-286-00	FUSE (T2.5A)	
⚠F904	1-532-286-00	FUSE (T2.5A)	
⚠F905	1-532-777-21	FUSE, MICRO(SECONDARY)(1.25A)	(AEP, UK, EE)
⚠F906	1-532-777-21	FUSE, MICRO(SECONDARY)(1.25A)	(AEP, UK, EE)
		< IC >	
IC401	8-759-636-74	IC M5218AP-22	(AUS, E, EA)
IC901	8-759-820-09	IC LA5667	
IC902	8-759-602-66	IC M5230L-A	
IC903	8-759-821-93	IC LA5601	
IC904	8-759-231-61	IC TA7820S	
		< IC LINK >	
⚠ICP905	1-532-840-21	LINK, IC	(G, AUS, E, EA)
⚠ICP906	1-532-840-21	LINK, IC	(G, AUS, E, EA)
		< JACK >	
J401	1-562-837-21	JACK (MIX MIC)	(AUS, E, EA)
J601	1-562-837-21	JACK (HEADPHONES)	
J602	1-565-406-21	JACK, PIN 1P (SUPER WOOFER)	(AEP, G, EE)
* J602	1-691-678-11	JACK, PIN 3P (SURROUND, SUPERWOOFER)	(UK, AUS, E, EA)
		< TRANSISTOR >	
Q903	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q904	8-729-209-15	TRANSISTOR 2SD2012	
Q905	8-729-900-36	TRANSISTOR DTC124ES	
Q906	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q916	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q921	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q931	8-729-900-89	TRANSISTOR DTC144ES	
Q932	8-729-900-36	TRANSISTOR DTC124ES	
		< RESISTOR >	
R402	1-249-441-11	CARBON 100K 5% 1/4W	(AUS, E, EA)
R403	1-249-429-11	CARBON 10K 5% 1/4W	(AUS, E, EA)
R404	1-249-417-11	CARBON 1K 5% 1/4W	(AUS, E, EA)
R405	1-247-862-11	CARBON 20K 5% 1/4W	(AUS, E, EA)
R407	1-249-441-11	CARBON 100K 5% 1/4W	(AUS, E, EA)
R408	1-249-429-11	CARBON 10K 5% 1/4W	(AUS, E, EA)
R409	1-249-441-11	CARBON 100K 5% 1/4W	(AUS, E, EA)
R410	1-249-429-11	CARBON 10K 5% 1/4W	(AUS, E, EA)
R411	1-249-409-11	CARBON 220 5% 1/4W	(AUS, E, EA)
R412	1-249-409-11	CARBON 220 5% 1/4W	(AUS, E, EA)
R413	1-249-409-11	CARBON 220 5% 1/4W	(AUS, E, EA)
R415	1-249-411-11	CARBON 330 5% 1/4W	(AUS, E, EA)
R631	1-247-745-11	CARBON 330 5% 1/2W	
R632	1-249-421-11	CARBON 2.2K 5% 1/4W	
R633	1-249-413-11	CARBON 470 5% 1/4W	
R634	1-249-421-11	CARBON 2.2K 5% 1/4W	
R681	1-247-745-11	CARBON 330 5% 1/2W	
R903	1-249-409-11	CARBON 220 5% 1/4W	
R904	1-249-409-11	CARBON 220 5% 1/4W	
R905	1-247-903-00	CARBON 1M 5% 1/4W	
R906	1-249-414-11	CARBON 560 5% 1/4W	
R907	1-249-414-11	CARBON 560 5% 1/4W	
R908	1-247-852-11	CARBON 7.5K 5% 1/4W	
R909	1-247-852-11	CARBON 7.5K 5% 1/4W	
R910	1-249-429-11	CARBON 10K 5% 1/4W	(AEP, UK, G, EE)
R910	1-247-856-00	CARBON 11K 5% 1/4W	(AUS, E, EA)
R911	1-249-423-11	CARBON 3.3K 5% 1/4W	
R912	1-249-421-11	CARBON 2.2K 5% 1/4W	
R913	1-249-413-11	CARBON 470 5% 1/4W	
R916	1-249-421-11	CARBON 2.2K 5% 1/4W	
R920	1-249-434-11	CARBON 27K 5% 1/4W	
R922	1-249-425-11	CARBON 4.7K 5% 1/4W	
R923	1-249-425-11	CARBON 4.7K 5% 1/4W	
R931	1-249-435-11	CARBON 33K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV401	1-241-140-11	RES, VAR, CARBON 10K (MIC LEVEL)	(AUS, E, EA)
		< SWITCH >	
⚠S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)	(E, EA)
		< TERMINAL >	
* TB601	1-536-708-41	TERMINAL BOARD, PUSH 4P (SPEAKER OUT)	

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Ref. No.	Part No.	Description	Remarks
*	1-643-250-11	TRANSFORMER BOARD *****************	
		< CONNECTOR >	
CN900	1-691-910-11	PIN, CONNECTOR (PC BOARD) 10P	
		< JACK >	
⚠*CNJ905	1-526-930-11	INLET, AC (~AC IN)	(AUS, E)
⚠*CNJ905	1-526-931-11	INLET, AC (~AC IN)	(EXCEPT AUS, E)
		< FUSE >	
⚠F901	1-532-203-00	FUSE (T2A)	
⚠F902	1-532-203-00	FUSE (T2A)	(E, EA)
		< TRANSFORMER >	
⚠T901	1-450-825-11	TRANSFORMER, POWER	(AEP, G, EE)
⚠T901	1-450-826-11	TRANSFORMER, POWER	(UK, AUS)
⚠T901	1-450-827-11	TRANSFORMER, POWER	(E, EA)

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Replace only with part number specified.

When indicating parts by reference number, please include the board name.

TUNER

Ref.No.	Part No.	Description	Remarks
*	A-4356-039-A	TUNER BOARD, COMPLETE (EE)	
*	A-4347-509-A	TUNER BOARD, COMPLETE (AEP,UK)	
*	A-4347-510-A	TUNER BOARD, COMPLETE (G)	
		*********************	
		< CAPACITOR >	
C1	1-124-120-11	ELECT 220uF 20%	25V
C2	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C5	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C6	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C8	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C9	1-163-012-00	CERAMIC CHIP 0.0018uF 10%	50V
C10	1-163-011-11	CERAMIC CHIP 0.0015uF 10%	50V
C21	1-163-237-11	CERAMIC CHIP 27PF 5%	50V
C22	1-163-237-11	CERAMIC CHIP 27PF 5%	50V
C23	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C24	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C25	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C26	1-164-346-11	CERAMIC CHIP 1uF	16V
C27	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C29	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C31	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C32	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C33	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C34	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C35	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C36	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C51	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C52	1-126-162-11	ELECT 3.3uF 20%	50V
C53	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C54	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C55	1-163-105-00	CERAMIC CHIP 33PF 5%	50V (AEP,UK,EE)
C55	1-163-135-00	CERAMIC CHIP 560PF 5%	50V (G)
C56	1-163-117-00	CERAMIC CHIP 100PF 5%	50V (G)
C57	1-164-346-11	CERAMIC CHIP 1uF	16V
C58	1-164-346-11	CERAMIC CHIP 1uF	16V
C59	1-164-346-11	CERAMIC CHIP 1uF	16V
C60	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C61	1-163-022-00	CERAMIC CHIP 0.012uF 10%	50V
C62	1-163-022-00	CERAMIC CHIP 0.012uF 10%	50V
C63	1-164-346-11	CERAMIC CHIP 1uF	16V
C64	1-164-346-11	CERAMIC CHIP 1uF	16V
C65	1-164-346-11	CERAMIC CHIP 1uF	16V
C66	1-164-346-11	CERAMIC CHIP 1uF	16V
C69	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C70	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C71	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C72	1-124-120-11	ELECT 220uF 20%	25V
C73	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C74	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C75	1-126-157-11	ELECT 10uF 20%	16V
C76	1-126-101-11	ELECT 100uF 20%	16V
C79	1-126-157-11	ELECT 10uF 20%	16V
C80	1-124-472-11	ELECT 470uF 20%	10V
C81	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C82	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C83	1-163-031-11	CERAMIC CHIP 0.01uF	50V (G)
		< FILTER >	
CF1	1-567-389-11	FILTER, CERAMIC (10.7MHz)	
CF2	1-567-389-11	FILTER, CERAMIC (10.7MHz)	(G)
CF51	1-567-389-11	FILTER, CERAMIC (10.7MHz)	
		< CONNECTOR >	
CN1	1-691-680-11	HOUSING, CONNECTOR(PC BOARD)4P	
CN2	1-691-680-11	HOUSING, CONNECTOR(PC BOARD)4P	
CN5	1-691-680-11	HOUSING, CONNECTOR(PC BOARD)4P	
CN34	1-691-681-11	HOUSING, CONNECTOR(PC BOARD)8P	
		< DIODE >	
D21	8-719-422-46	DIODE MA8056	
D51	8-719-988-62	DIODE 1SS355	
		< FRONTEND >	
FE1	1-465-673-11	FRONTEND (FM 2 BAND) (FM)	(AEP,UK)
FE1	1-463-957-11	FRONTEND (FM 4 BAND) (FM)	(G)
FE1	1-465-396-11	FRONTEND (FM 3 BAND) (FM)	(EE)
FE2	1-239-030-11	ENCAPSULATED COMPONENT (MW)	
FE3	1-239-049-11	ENCAPSULATED COMPONENT (LW)	
		< FILTER >	
FL51	1-239-029-11	ENCAPSULATED COMPONENT	(G)
		< IC >	
IC21	8-759-821-43	IC LC7218M	
IC51	8-759-823-68	IC LA1851NM	
		< IFT >	
IFT51	1-404-954-11	TRANSFORMER, DISCRIMINATOR (FM DET)	
IFT52	1-404-713-11	TRANSFORMER, IF (MW/LW IF)	
		< JUMPER RESISTOR >	
JW1	1-216-295-00	METAL CHIP 0 5%	1/10W
JW2	1-216-295-00	METAL CHIP 0 5%	1/10W (AEP,UK)
JW4	1-216-295-00	METAL CHIP 0 5%	1/10W
JW5	1-216-295-00	METAL CHIP 0 5%	1/10W
JW7	1-216-295-00	METAL CHIP 0 5%	1/10W

When indicating parts by reference number, please include the board name.

TUNER

Ref. No.	Part No.	Description	Remarks
		< COIL >	
L1	1-408-793-21	INDUCTOR CHIP 220uH	
L51	1-408-798-00	INDUCTOR CHIP 1mH	
		< FILTER >	
LPF51	1-235-221-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-804-72	TRANSISTOR 2SC2814-F4	
Q2	8-729-804-72	TRANSISTOR 2SC2814-F4	(G)
Q3	8-729-810-16	TRANSISTOR 2SA1678	
Q4	8-729-602-36	TRANSISTOR 2SA1602	
Q5	8-729-810-28	TRANSISTOR 2SC4398	
Q6	8-729-602-36	TRANSISTOR 2SA1602	
Q7	8-729-810-28	TRANSISTOR 2SC4398	
Q21	8-729-602-21	TRANSISTOR 2SC4154-F	
Q22	8-729-232-69	TRANSISTOR 2SK208GR3	
Q23	8-729-232-59	TRANSISTOR 2SC4666B	
Q24	8-729-232-69	TRANSISTOR 2SK208GR3	
Q25	8-729-232-59	TRANSISTOR 2SC4666B	
Q51	8-729-602-21	TRANSISTOR 2SC4154-F	
Q52	8-729-602-21	TRANSISTOR 2SC4154-F	
Q53	8-729-810-28	TRANSISTOR 2SC4398	
		< RESISTOR >	
R03	1-216-037-00	METAL CHIP 330 5% 1/10W	
R1	1-216-037-00	METAL CHIP 330 5% 1/10W	
R2	1-216-037-00	METAL CHIP 330 5% 1/10W	
R3	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R4	1-216-037-00	METAL CHIP 330 5% 1/10W	
R5	1-216-109-00	METAL CHIP 330K 5% 1/10W	(G)
R6	1-216-037-00	METAL CHIP 330 5% 1/10W	(G)
R7	1-216-025-00	METAL CHIP 100 5% 1/10W	
R8	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R9	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R10	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R11	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R12	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R13	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R14	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R15	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R16	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R21	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R22	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R24	1-216-025-00	METAL CHIP 100 5% 1/10W	
R25	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R26	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R27	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R28	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R29	1-216-025-00	METAL CHIP 100 5% 1/10W	
R30	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R31	1-216-043-00	METAL CHIP 560 5% 1/10W	
R32	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R33	1-216-035-00	METAL CHIP 270 5% 1/10W	
R34	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R35	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R36	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R37	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R38	1-216-025-00	METAL CHIP 100 5% 1/10W	
R39	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R40	1-216-043-00	METAL CHIP 560 5% 1/10W	
R41	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R42	1-216-035-00	METAL CHIP 270 5% 1/10W	
R43	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R44	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R45	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R46	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R47	1-216-025-00	METAL CHIP 100 5% 1/10W	
R51	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R52	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R53	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R54	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R55	1-216-075-00	METAL CHIP 12K 5% 1/10W	(AEP, UK, EE)
R56	1-216-075-00	METAL CHIP 12K 5% 1/10W	(G)
R57	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R58	1-216-066-00	METAL CHIP 5.1K 5% 1/10W	
R59	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R60	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R61	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R62	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R63	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R64	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R65	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R66	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R67	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R68	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R69	1-216-025-00	METAL CHIP 100 5% 1/10W	
R70	1-216-025-00	METAL CHIP 100 5% 1/10W	
R71	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R72	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R73	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R74	1-216-013-00	METAL CHIP 33 5% 1/10W	
R75	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R79	1-216-049-00	METAL CHIP 1K 5% 1/10W	(AEP, UK, EE)
R79	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	(G)

When indicating parts by reference number, please include the board name.

TUNER

Ref. No.	Part No.	Description				Remarks
		< VARIABLE RESISTOR >				
RV51	1-238-601-11	RES, ADJ, CARBON 22K				(MW/LW TUNED IND. LEVEL)
RV52	1-238-601-11	RES, ADJ, CARBON 22K				(FM TUNED IND. LEVEL)
		< TEST PIN >				
* TP51	1-564-336-00	PIN, CONNECTOR 2P				
		< CRYSTAL >				
X21	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)				
X51	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)				
**						
*	A-4347-508-A	TUNER BOARD, COMPLETE (AUS)				
*	A-4347-511-A	TUNER BOARD, COMPLETE (E, EA)				
		****************************				
		< CAPACITOR >				
C1	1-124-120-11	ELECT	220uF	20%	25V	
C2	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C3	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C5	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C12	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V	(E, EA)
C13	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(E, EA)
C14	1-163-088-00	CERAMIC CHIP	5PF		50V	(E, EA)
C21	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C22	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C23	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C24	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C25	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C26	1-164-346-11	CERAMIC CHIP	1uF		16V	
C27	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
C29	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C31	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
C32	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C33	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C51	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C52	1-126-162-11	ELECT	3.3uF	20%	50V	
C53	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C54	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C55	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	(E, EA)
C57	1-164-346-11	CERAMIC CHIP	1uF		16V	
C58	1-164-346-11	CERAMIC CHIP	1uF		16V	
C59	1-164-346-11	CERAMIC CHIP	1uF		16V	
C60	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C61	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	(E, EA)
C61	1-163-023-00	CERAMIC CHIP	0.015uF	10%	50V	(AUS)
C62	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	(E, EA)
C62	1-163-023-00	CERAMIC CHIP	0.015uF	10%	50V	(AUS)
C63	1-164-346-11	CERAMIC CHIP	1uF		16V	
C64	1-164-346-11	CERAMIC CHIP	1uF		16V	
C65	1-164-346-11	CERAMIC CHIP	1uF		16V	
C66	1-164-346-11	CERAMIC CHIP	1uF		16V	
C69	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C70	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C71	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C72	1-124-120-11	ELECT	220uF	20%	25V	
C73	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
C74	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C75	1-126-157-11	ELECT	10uF	20%	16V	
C76	1-126-101-11	ELECT	100uF	20%	16V	
C79	1-126-157-11	ELECT	10uF	20%	16V	
C80	1-124-472-11	ELECT	470uF	20%	10V	
C81	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C82	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
		< FILTER >				
CF1	1-567-389-11	FILTER, CERAMIC (10.7MHz)				
CF51	1-567-389-11	FILTER, CERAMIC (10.7MHz)				
		< CONNECTOR >				
CN1	1-691-680-11	HOUSING, CONNECTOR(PC BOARD)4P				
CN2	1-691-680-11	HOUSING, CONNECTOR(PC BOARD)4P				
CN5	1-691-680-11	HOUSING, CONNECTOR(PC BOARD)4P				
CN34	1-691-681-11	HOUSING, CONNECTOR(PC BOARD)8P				
		< VARIABLE CAPACITOR >				
CV1	1-141-227-00	CAP, TRIMMER	20PF			(E, EA)
CV2	1-141-227-00	CAP, TRIMMER	20PF			(E, EA)
		< DIODE >				
D1	8-719-976-30	DIODE	KV1560N			(E, EA)
D21	8-719-422-46	DIODE	MA8056			
D51	8-719-988-62	DIODE	1SS355			
		< FRONTEND >				
FE1	1-465-673-11	FRONTEND (FM 2 BAND) (FM)				
FE2	1-239-031-11	ENCAPSULATED COMPONENT (MW)				(AUS)
FE2	1-239-032-11	ENCAPSULATED COMPONENT (MW)				(E, EA)
		< IC >				
IC21	8-759-821-43	IC	LC7218M			
IC51	8-759-823-68	IC	LA1851NM			
		< IFT >				
IFT51	1-404-954-11	TRANSFORMER, DISCRIMINATOR (FMDET)				
IFT52	1-404-713-11	TRANSFORMER, IF (MW/SW IF)				

When indicating parts by reference number, please include the board name.

TUNER

Ref. No.	Part No.	Description	Remarks
		< JUMPER RESISTOR >	
JW1	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW2	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW3	1-216-295-00	METAL CHIP 0 5% 1/10W	(E, EA)
JW4	1-216-295-00	METAL CHIP 0 5% 1/10W	(AUS)
JW5	1-216-295-00	METAL CHIP 0 5% 1/10W	(AUS)
JW6	1-216-295-00	METAL CHIP 0 5% 1/10W	(AUS)
		< COIL >	
L51	1-408-798-00	INDUCTOR CHIP 1mH	
		< FILTER >	
LPF51	1-235-221-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-804-72	TRANSISTOR 2SC2814-F4	
Q3	8-729-810-16	TRANSISTOR 2SA1678	
Q4	8-729-602-36	TRANSISTOR 2SA1602	(E, EA)
Q5	8-729-602-36	TRANSISTOR 2SA1602	(E, EA)
Q6	8-729-810-28	TRANSISTOR 2SC4398	(E, EA)
Q7	8-729-810-28	TRANSISTOR 2SC4398	(E, EA)
Q21	8-729-602-21	TRANSISTOR 2SC4154-F	
Q22	8-729-232-69	TRANSISTOR 2SK208GR3	
Q23	8-729-232-59	TRANSISTOR 2SC4666B	
Q51	8-729-602-21	TRANSISTOR 2SC4154-F	
Q52	8-729-602-21	TRANSISTOR 2SC4154-F	
Q53	8-729-810-28	TRANSISTOR 2SC4398	
		< RESISTOR >	
R1	1-216-037-00	METAL CHIP 330 5% 1/10W	
R2	1-216-037-00	METAL CHIP 330 5% 1/10W	
R3	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R4	1-216-037-00	METAL CHIP 330 5% 1/10W	
R7	1-216-025-00	METAL CHIP 100 5% 1/10W	
R8	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E, EA)
R9	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R10	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R16	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E, EA)
R17	1-216-121-00	METAL CHIP 1M 5% 1/10W	(E, EA)
R18	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E, EA)
R21	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R22	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R24	1-216-025-00	METAL CHIP 100 5% 1/10W	
R25	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R26	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R27	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R28	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R29	1-216-025-00	METAL CHIP 100 5% 1/10W	
R30	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R31	1-216-043-00	METAL CHIP 560 5% 1/10W	
R32	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R33	1-216-035-00	METAL CHIP 270 5% 1/10W	
R34	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R35	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R36	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R37	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R38	1-216-025-00	METAL CHIP 100 5% 1/10W	
R47	1-216-025-00	METAL CHIP 100 5% 1/10W	
R51	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R52	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R53	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R54	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R55	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R57	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R58	1-216-066-00	METAL CHIP 5.1K 5% 1/10W	
R59	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R60	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R61	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R62	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R63	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R64	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R65	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R66	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R67	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R68	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R69	1-216-025-00	METAL CHIP 100 5% 1/10W	
R70	1-216-025-00	METAL CHIP 100 5% 1/10W	
R71	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R72	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R73	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R74	1-216-001-00	METAL CHIP 10 5% 1/10W	
R79	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV51	1-238-601-11	RES, ADJ, CARBON 22K	(MW/SW TUNED IND. LEVEL)
RV52	1-238-601-11	RES, ADJ, CARBON 22K	(FM TUNED IND. LEVEL)
		< COIL >	
T1	1-402-547-11	COIL (ANT. SW3)	(E, EA)
T2	1-406-415-11	COIL (OSC. SW3)	(E, EA)
		< TEST PIN >	
* TP51	1-564-336-00	PIN, CONNECTOR 2P	

When indicating parts by reference number, please include the board name.

TUNER

< CRYSTAL >

Ref.No.	Part No.	Description	Remarks
X21	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)	
X51	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)	

****

MISCELLANEOUS
****

Ref.No.	Part No.	Description	Remarks
7	1-590-907-11	WIRE, FLAT TYPE (20 CORE)	
8	1-590-908-11	WIRE, FLAT TYPE (20 CORE)	
51	1-590-906-11	WIRE, FLAT TYPE (19 CORE)	
* 53	1-533-213-31	HOLDER, FUSE	
168	1-590-530-11	WIRE, FLAT TYPE (5 CORE)	
⚠204	8-848-144-11	DEVICE, OPTICAL KSS-240A	
205	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
⚠*CNJ905	1-526-930-11	INLET, AC (~AC IN)	(AUS, E)
⚠*CNJ905	1-526-931-11	INLET, AC (~AC IN)	(EXCEPT AUS, E)
⚠F901	1-532-203-00	FUSE (T2A)	
⚠F902	1-532-203-00	FUSE (T2A)	(E, EA)
⚠F903	1-532-286-00	FUSE (T2.5A)	
⚠F904	1-532-286-00	FUSE (T2.5A)	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M291	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
Q903	8-729-141-83	TRANSISTOR 2SB1094-LK	
⚠T901	1-450-825-11	TRANSFORMER, POWER	(AEP, G, EE)
⚠T901	1-450-826-11	TRANSFORMER, POWER	(UK, AUS)
⚠T901	1-450-827-11	TRANSFORMER, POWER	(E, EA)
IC901	8-759-820-09	IC LA5667	
IC904	8-759-231-61	IC TA7820S	
RV401	1-241-140-11	RES, VAR, CARBON 10K (MIC LEVEL)	(AUS, E, EA)

****

HARDWARE LIST

Ref.No.	Part No.	Description	Remarks
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-621-773-93	SCREW (PANEL 2.6 TP2)	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-682-547-04	SCREW +BVTT 3X6 (S)	
#5	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
#6	7-685-234-19	SCREW +KTP 2.6X8 TYPE2NON-SLIT	
#7	7-624-105-04	STOP RING 2.3, TYPE -E	
#8	7-621-775-10	SCREW +B 2.6X4	
#9	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#10	7-621-255-15	SCREW +P 2X3	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

English
92E1914-1
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9-957-007-12

Published by Customer Relations and Service Group

HCD-H1700

SONY

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

SUPPLEMENT-1

File this supplement with the service manual.

Additional of Italian model.

- For Italian model, see the description on Germany model in the 9-957-007-11 service manual.

- The following are used only in the HCD-H1700 (Italian model).

Page	Ref.No.	Part No.	Description	Remarks
73, 83	*5	A-4347-101-A	PANEL BOARD, COMPLETE (Italian)	
84	R313	1-216-062-00	METAL CHIP 3.6K 5% 1/10W (Italian)	

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92E1917-1
Printed in Japan
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Audio Group

Published by Customer Relations and Service Group

SS-H1700/H1700C

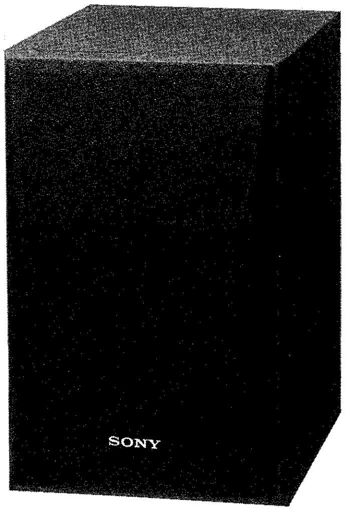
SERVICE MANUAL

E Model
Australian Model
SS-H1700

Canadian Model
SS-H1700C

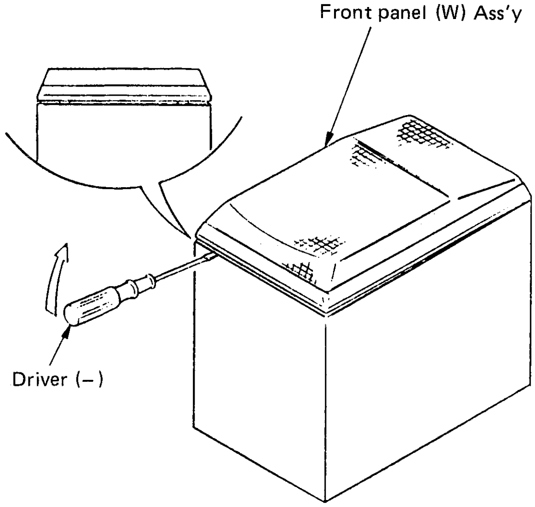
SPECIFICATIONS

Speaker system	3-way, bass reflex type
Speaker units	Woofer: 13cm cone type Mid-range: 6cm cone type Tweeter: 2cm dome type
Nominal impedance	6Ω
Power handling capacity	Maximum input power 60W
Dimensions	Approx. 160x250x235mm (w/h/d)
Weight	Approx. 3kg

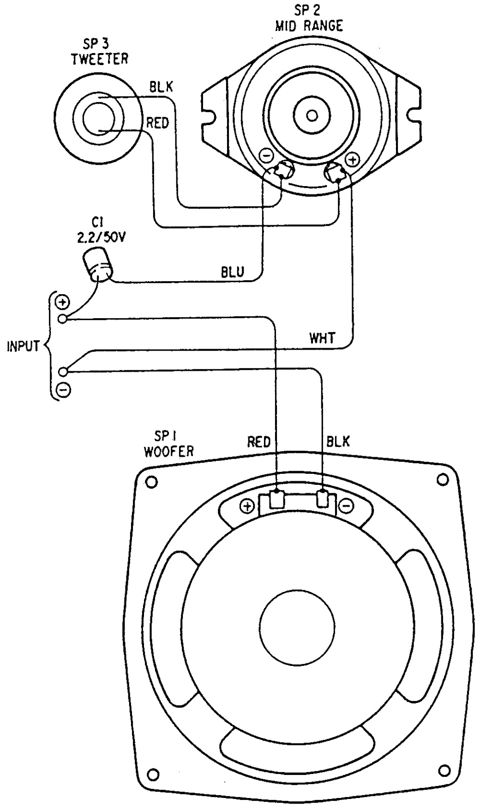


This set is the speaker system in MHC-1700.

1. FRONT PANEL (W) ASSY REMOVAL


Front panel (W) Ass'y
Driver (–)

2. LEAD WIRES ARRANGMENT


SP 2
MID RANGE
SP 3
TWEETER
BLK
RED
C1
2.2/50V
BLU
INPUT
WHT
SP 1
WOOFER
RED
BLK

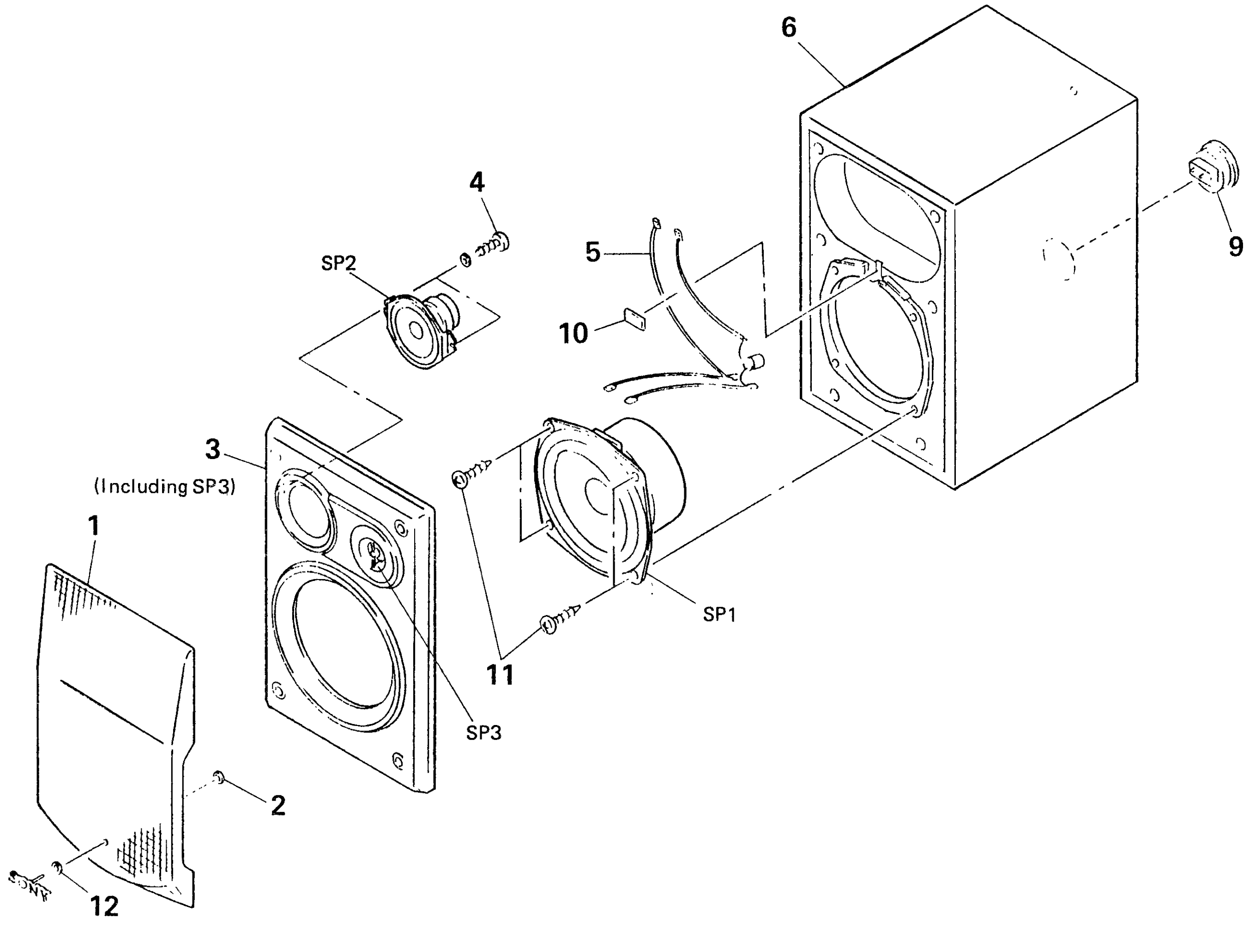
SPEAKER SYSTEM

SONY®

3. EXPLODED VIEW AND PARTS LIST

NOTE:

- –XX, –X mean standardized parts, so they may have some differences from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.



Ref.No.	Part.No.	Description	Remarks
1	X-4942-174-1	FRAME ASSY, GRILLE	
2	7-624-200-11	NUT, PUSH 2	
3	X-4942-173-1	PANEL (R) ASSY, FRONT	
3	X-4942-177-1	PANEL (L) ASSY, FRONT	
4	7-685-659-21	SCREW +BVTP 4x8 TYPE 2 SLIT	
5	1-690-636-11	CORD, CONNECTION	
6	X-4942-356-1	CABINET ASSY, SPEAKER	
9	1-537-332-11	TERMINAL BOARD	
10	9-911-844-XX	PACKING	
11	4-874-614-11	SCREW (4) (3.5x14), TAPPING	
12	3-701-437-21	WASHER	
SP1	1-544-428-12	SPEAKER (12cm) (SS-H1700)	
SP1	1-544-445-11	SPEAKER (12cm) (SS-H1700C)	
SP2	1-544-632-11	SPEAKER (6cm)	

ACCESSORY & PACKING MATERIAL

Ref.No.	Part.No.	Description	Remarks
*	4-950-000-01	CUSHION	

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